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Maj, 2016.

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1 UVOD

Osnovni cilj izrade Kataloga proizvoda od biomase predstavlja pružanje jasnih i nedvosmislenih principa klasifikacije proizvoda, specifikacija njihovih dimenzija, jedinica mere u kojima se proizvode i distribuiraju na tržište i ostalih elemenata od značaja za efikasnu trgovinu i dobro razumevanje između prodavca i kupca. Pored navedenog, Katalog proizvoda od biomase je dobar alat za izveštavanje od strane proizvođača i trgovaca prema nadležnim telima, komorama, asocijacijama i drugim organizacijama.

Glavna **svrha izrade** Kataloga proizvoda od biomase predstavlja podršku:

- programerima i drugim učesnicima u procesu formiranja baze podataka za potrebe trgovine ovim proizvodima na **berzi biomase i**
- **direktnim učesnicima u procesu trgovine za bolje razumevanje karakteristika proizvoda sa kojima trguju**.

Iz tog razloga svakom proizvodu od biomase dodeljen je odgovarajući generički kod, a unutar njega definisan je trgovački kod sa najvažnijim elementima koji omogućavaju jasno prepoznavanje proizvoda i njegovih karakteristika (pre svega: klase kvaliteta, nivoa vlažnosti, dimenzija i jedinice mere).

Definisanje trgovačkog koda bazirano je na grupi SRPS EN ISO 17225/1-6: 2015 standarda koji su važili u momentu izrade ovog Kataloga. Zbog toga se preporučuje praćenje svih budućih izmena ove grupe standarda i pravovremeno ažuriranje trgovačkih kodova za one proizvode na koje se te izmene budu odnosile.

U cilju efikasnije trgovine na berzi biomase kao i sprečavanja nesporazuma između učesnika u trgovini preporuka je da se isti dobro upoznaju sa svim elementima iz ovog Kataloga kao i sa odredbama standarda za pojedinačna goriva iz navedene grupe standarda.

2 OPIS I GLAVNE KARAKTERISTIKE NAJZNAČAJNIJIH TIPOVA DRVNIH GORIVA

Imajući u vidu brojne specifičnosti različitih drvnih goriva u nastavku su predstavljene najznačajnije karakteristike i vrednosti parametara za:

- ogrevno drvo;
- drvnu sečku;
- drvne brikete;
- drvne pelete i
- drveni ugalj.

Izbor navedenih proizvoda rezultat je činjenice da su ona najzastupljeniji tipovi proizvoda od drvne biomase sa kojima se trguje u Srbiji.

Pri tom, potrebno je naglasiti da, u trenutku izrade Kataloga proizvoda iz biomase, u Srbiji postoje jedino propisi koji se odnose na maksimalno dozvoljenu težinu utovarenog prevoznog sredstva i obavezu korišćenja pokrivnih cirada u transportu drvnih goriva u rasutom stanju (piljevina, drvna sečka, kora od drveta, drvni ostaci od rezanja). Tehnički propisi kojima se reguliše obaveza i način ispitivanja kvaliteta drvnih goriva koja se distribuiraju na tržište i s tim u vezi obaveznost posedovanja odgovarajućih atesta i sertifikata, za sada ne postoje.

U tabelama koje su date u nastavku za svako drvno gorivo navedeni su i odgovarajući standardi po kojima se vrši ispitivanje i merenje pojedinih parametara.

2.1 Ogrevno drvo

Ogrevno drvo predstavlja sečeno i cepano drvo za ogrev spremno za upotrebu u domaćinstvima u uređajima na čvrsta goriva kao što su štednjaci, kamini i sistemi za centralno grejanje. Najzastupljenija dužina u kojoj se proizvodi i distribuira ogrevno drvo je 1 metar.

Pored toga što se koristi u stambenim objektima, ogrevno drvo se koristi kao gorivo i u malim komercijalnim objektima i objektima od javnog značaja. Zbog toga se zahteva da ogrevno drvo poseduje odgovarajući kvalitet jer su u navedenim objektima najčešće uređaji malog kapaciteta, bez napredne kontrole i prečišćavanja dimnih gasova kao i da uređajima ne upravljaju profesionalci specijalizovani za grejanje.

Prema standardu SRPS EN ISO 17225-5:2015 ogrevno drvo se razvrstava u tri klase: A1, A2 i B klasu. Drvo koje ispunjava kriterijume A1 i A2 klase pogodno je za korišćenje u pećima i kaminima, a klase B u kotlovima na drva.

Najznačajniji parametri pojedinih karakteristika unutar navedenih klasa dati su u sledećoj tabeli.

KARAKTERISTIKE	JEDINICE	A1	A2	B
Poreklo i izvor, ISO 17225-1		1.1.3 Deblo 1.2.1 Hemijski netretirani ostaci od drveta	1.1.1 Cela stabla bez korena 1.1.3 Deblo 1.1.4 Ostaci od seče 1.2.1 Hemijski netretirani ostaci od drveta	**1.1.1 Cela stabla bez korena** **1.1.3 Deblo** **1.1.4 Ostaci od seče** **1.2.1 Hemijski netretirani ostaci od drveta**

Vrsta drveta		Navodi se	**Navodi se**
Prečnik, D	cm	D2 ≤ 2 D5 2 < D ≤ 5 D15 5 < D ≤ 15 D15+ > 15 (navodi se stvarna vrednost)	**D15 5 < D ≤ 15** **D15+ > 15 (navodi se stvarna vrednost)**
Dužina, L [a]	cm	L20 ≤ 20 (±2 cm) L25 ≤ 25 (±2 cm) L30 ≤ 30 (±2 cm) L33 ≤ 33 (±2 cm) L40 ≤ 40 (±2 cm) L50 ≤ 50 (±4 cm) L100 ≤ 100 (±5 cm)	**L30 ≤ 30 (±2 cm)** **L33 ≤ 33 (±2 cm)** **L40 ≤ 40 (±2 cm)** **L50 ≤ 50 (±4 cm)** **L100 ≤ 100 (±5 cm)**
Vlaga,M, **ISO 18134-1,** **ISO 18134-2**	% m u primljenom stanju (merena u odnosu na vlažno stanje)	M20 ≤ 20 M25 ≤ 25	**M20 ≤ 20** **M25 ≤ 25** **M35 ≤ 35**
Neto kalorijska vrednost, Q, [d] **ISO 18125**	**MJ/prm ili kWh/prm ili MJ/kg ili kWh/kg, u primljenom stanju**	**Preporučuje se da se navede.**	

a) Dozvoljeno je da 15 % ogrevnog drveta bude kraće od zahtevane dužine uključujući graničnu vrednost.

Najčešće jedinice mere u kojima se iskazuje zapremina ogrevnog drveta su prostorni metar i kubni metar. Zapremina manjih pakovanja cepanog drveta se može iskazivati i u kilogramima. Zapremina se iskazuje sa tačnošću od tri decimalna mesta. Merenje dimenzija svih formi ogrevnog drveta vrši se metrom pri čemu se lišćari isporučuju i mere sa korom.

2.2 Drvna sečka

Drvna sečka predstavlja usitnjeno drvno gorivo proizvedeno usitnjavanjem drveta mehaničkim postupkom pomoću oštrih alata (kao što su noževi) na sitne komade definisane veličine čestica tako da mogu biti korišćeni u automatskim kotlovima za grejanje većih individualnih kuća, stambenih zgrada, javnih ustanova ili ustanova društvene namene. Dobija se najčešće usitnjavanjem oblovine, krupnog i sitnog ostatka iz šume, drvnog ostatka koji nastaje u procesu prerade drveta, od drveta iz sektora građevinarstva, ambalažnog drveta kao i drveta izvan šume (parkovi, drvoredi).

Komadi drvne sečke su približno pravougaonog oblika, a njihova veličina je definisana standardom SRPS EN ISO 17225-4:2015. Vrednosti parametara koji se odnose na dimenzije i učešće pojedinih frakcija u ukupno isporučenoj zapremini drvne sečke su prikazane u sledećoj tabeli.

Dimenzije (mm), ISO 17827-1				
Glavna frakcija[a] (najmanje 60 % m), mm		Sitna frakcija, % m (≤3,15 mm)	Krupna frakcija, % m, (dužina čestice, mm)	Najveća dužina čestica[b], mm
P16S	3,15 mm < *P* ≤ 16 mm	≤ 15 %	≤ 6 % (>31,5 mm)	≤ 45 mm
P31S	3,15 mm < *P* ≤ 31,5 mm	≤ 10 %	≤ 6 % (>45 mm)	≤ 150 mm

P45S	3,15 mm < *P* ≤ 45 mm	≤ 10 %	≤ 10 % (>63 mm)	≤ 200 mm

a Numeričke vrednosti (P-klasa) dimenzije odnose se na veličine čestica koje prolaze kroz sito sa okruglim otvorima pomenute veličine (ISO 17827-1). Treba da se navede najniža moguća klasa. Za drvnu sečku mora da se navede samo jedna klasa.

b Dužina i površina poprečnog preseka moraju da se odrede samo za one čestice koje se nalaze u krupnoj frakciji. Najviše 2 komada iz uzorka od oko *10 l* sme da bude veće od najveće dužine ako je površina poprečnog preseka < 0,5 cm^2.

Prema standardu SRPS EN ISO 17225-4:2015 drvna sečka se razvrstava u četiri klase: A1, A2, B1 i B2 klasu.

Najznačajniji parametri pojedinih karakteristika unutar navedenih klasa dati su u sledećoj tabeli.

KLASA SVOJSTVA	JEDINICA	A		B	
		1	2	1	2
Poreklo i izvor ISO 17225-1		1.1.1 Cela stabla bez korena[a] 1.1.3 Deblo 1.1.4 Ostaci od seče 1.2.1 Hemijski netretirani ostaci od drveta	1.1.1 Cela stabla bez korena[a] 1.1.3 Deblo 1.1.4 Ostaci od seče 1.2.1 Hemijski netretirani ostaci od drveta	1.1 Drvo iz šuma i plantaža i drugo potpuno prirodno drvo[b] 1.2.1 Hemijski netretirani ostaci od drveta	**1.1 Drvo iz šuma i plantaža i drugo potpuno prirodno drvo[b]** **1.2. Sporedni proizvodi i ostaci iz industrijske prerade drveta** **1.3.1. Hemijski netretirano korišćeno drvo**
Veličina čestice, P,ISO 17827-1	mm	Bira se iz prethodne tabele		**Bira se iz prethodne tabele**	
Vlaga, M[c], ISO 18134-1, ISO 18134-2	% m	M10 ≤ 10 M25 ≤ 25	M35 ≤ 35	**Navodi se najveća vrednost**	
Pepeo, A, ISO 18122	% m suv	A1.0 ≤ 1,0	A1.5 ≤ 1,5	**A3.0 ≤ 3,0**	
Nasipna gustina, BD[d], ISO 17828	kg/nasipnih m^3 u primljenom stanju	BD150 ≥ 150 BD200 ≥ 200 BD250 ≥ 250	BD150 ≥ 150 BD200 ≥ 200 BD250 ≥ 250 BD300 ≥ 300	**Navodi se najmanja vrednost**	

a Izuzimajući klasu 1.1.1.3 Izdanačke šume kratke ophodnje, ako postoji razlog za sumnju u vezi sa kontaminacijom zemljišta ili ako je sadnja korišćena za izdvajanje hemikalija ili ako je drveće tokom rasta đubreno otpadnim kanalizacionim talogom (koji se dobija prilikom prečišćavanja otpadnih voda ili hemijskog procesa).

b Izuzimajući klase 1.1.5 Panjevi/korenje i 1.1.6 Kora.

c Navodi se najniža moguća klasa svojstva. Neki kotlovi zahtevaju najmanji sadržaj vlage, što treba da se navede. Klasa vlažnosti M10 je za veštački sušenu drvnu sečku.

d Nasipna gustina mekog drveta je manja u odnosu na tvrdo drvo, videti informativni Prilog A standarda SRPS EN ISO 17225-4:2015.

Klase svojstava **A1** i **A2** predstavljaju potpuno prirodno drvo i hemijski netretirane ostatke od drveta. A1 predstavlja goriva koje imaju niži sadržaj pepela, što ukazuje na odsustvo ili prisustvo vrlo male količine kore, i niži sadržaj vlage, dok klasa A2 ima malo viši sadržaj pepela i sadržaj vlage. B1 proširuje poreklo i izvor klase A i obuhvata i drugi materijal kao što su izdanačke šume kratke ophodnje, drvo iz bašta i plantaža, itd. i hemijski netretirane industrijske sporedne proizvode i ostatke. Klasa svojstava B2 obuhvata i hemijski tretirane industrijske sporedne proizvode i ostatke i hemijski netretirano korišćeno drvo.

Merenje vlažnosti drvne sečke vrši se sa različitim uređajima koji imaju različitu preciznost, brzinu određivanja vlažnosti, a samim tim i cenu. Zbog toga izbor uređaja za merenje vlažnosti drvne sečke zavisi od zahtevane preciznosti i brzine kojom se ona želi odrediti. Na slici 1. predstavljen je model uređaja koji je često zastupljen u praksi, a koga karakteriše relativno brzo određivanje vlažnosti sa relativno visokom tačnošću.

Uređaj je u kompletu sa epruvetom odgovarajućih dimenzija (pre svega dužine) koje omogućavaju da se u nju naspe potrebna količina drvne sečke. Dužina sondi ovog uređaja je do 70 cm što omogućava visoku preciznost merenja jer se vlažnost meri na čitavom uzorku (epruveti).

Slika 1. Uređaj za merenje vlažnosti drvne sečke

S obzirom da vlažnost ima glavni značaj za određivanje cene to ju je potrebno što preciznije izmeriti. Ova konstatacija se posebno odnosi na isporuke proizvođača i trgovaca velikim toplanama čija je godišnja potrošnja nekoliko stotina tona. U takvim isporukama svaki procenat vlažnosti može da znači veliki gubitak ili dobitak za isporučioca ili korisnika. U tom smislu danas je u praksi najčešće zastupljen sistem isporuke po težini u atro tonama.

Atro tona predstavlja težinu apsolutno suvog drveta (sadržaj vlage 0%). Pri ovoj vlažnosti drvo ima maksimalnu energetsku vrednost. To znači da tada kupac kroz cenu drvne sečke plaća energiju, a ne vodu. Praktičan način obračuna isporuke i plaćanja drvne sečke dat je na sledećem primeru:

Primer 1. Neto težina drvne sečke bukve je 5.500 kg, a njena izmerena vlažnost 30% (znači 70% predstavlja čista drvna masa). Energetska vrednost 1 kg drveta bukve vlažnosti 0% iznosi 5,0 kWh/kg. U konkretnom primeru kupac je kupio sledeću količinu energije:

5.500 kg x 0,7 = 3.850 atro kg x 5,0 kWh/kg = 19.250 kWh

Imajući u vidu način obračuna atro težine i energije drvne sečke to su i njene cene znatno više u odnosu na cene drvne sečke koja se isporučuje i obračunava sa određenim procentom vlažnosti.

Pored vlage, sadržaj pepela je druga važna karakteristika kvaliteta drvne sečke. Količina pepela koji nastaje nakon procesa sagorevanja zavisi u najvećoj meri od veličine prisustva kore i sitne frakcije u isporučenoj količini drvne sečke. U tom smislu SRPS EN ISO 17225-4:2015 definiše tri nivoa sadržaja pepela:

U klasi **A1** maksimalno dozvoljena količina pepela ne sme da pređe **1%** maseni procenat u suvom stanju;

U klasi **A2** maksimalno dozvoljena količina pepela ne sme da pređe **1,5%** masenih procenata u suvom stanju i

U Klasama **B1 i B2** maksimalno dozvoljena količina pepela ne sme da pređe **3%** masena procenta u suvom stanju.

Dimenzije drvne sečke su od veoma velike važnosti za pouzdan rad kotlova. U najvećem broju slučajeva problemi u radu kotlova (zagušenje) prouzrokovani su neodgovarajućim dimenzijama i kvalitetom drvne sečke. Merenje dimenzija i zastupljenosti pojedinih frakcija u ukupno isporučenoj količini drvne sečke vrši se u skladu sa odredbama ISO standarda 17827-1.

2.3 Drvni briketi

Drvni briketi predstavljaju zgusnuto biogorivo proizvedeno sa ili bez aditiva čije su jedinice u obliku kocke, prizme ili valjka, prečnika većeg od 25 mm, koje se proizvodi sabijanjem usitnjene biomase u odgovarajućim presama (mehaničkim ili hidrauličnim).

Aditiv je supstanca koja je namerno dodata sirovini za gorivo da bi se poboljšao kvalitet goriva (npr. svojstva sagorevanja), smanjile emisije ili povećala efikasnost proizvodnje. Količina aditiva koja se dodaje je ograničena i iznosi maksimalno do 2% masena procenta u odnosu na količinu u primljenom stanju. Pri tom, obavezno je navođenje tipa i količine aditiva.

Prema standardu SRPS EN ISO 17225-3:2015 drvni briketi se razvrstavaju u tri klase: A1, A2 i B, a najznačajniji parametri pojedinih karaktersitika unutar navedenih klasa dati su u sledećoj tabeli:

KLASA SVOJSTVA	JEDINICE	A		B[A]
		1	2	
Poreklo i izvor **ISO 17225-1**		eblo 1.2.1 Hemijski netretirani ostaci od drveta [b]	1.1.1 Cela stabla bez korena 1.1.3 Deblo 1.1.4 Ostaci od seče 1 Hemijski netretirani ostaci od drveta [b]	**1 Drvo iz šuma i plantaža i drugo potpuno prirodno drvo** **1.2 Sporedni proizvodi i ostaci iz industrijske prerade drveta** **1.3.1 Hemijski netretirano korišćeno drvo**
Prečnik(*D*) ili dužina (L_1), širina (L_2) i visina (L_3)	mm	Navode se prečnik, širina, visina i dužina	Navode se prečnik, širina, visina i dužina	**Navode se prečnik, širina, visina i dužina**
	Oblik	Utvrđuje se prema standardu SRPS EN ISO 17225-3:2015	Utvrđuje se prema standardu SRPS EN ISO 17225-3:2015	**Utvrđuje se prema standardu SRPS EN ISO 17225-3:2015**
Vlaga, M, **ISO 18134-1,** **ISO 18134-2**	% m u primljenom stanju	M12 ≤ 12	M15 ≤ 15	**M15 ≤ 15**
Pepeo, A, ISO 18122	% m suv	A1.0 ≤ 1,0	A1.5 ≤ 1,5	**A3.0 ≤ 3,0**
Gustina čestica, DE **ISO 18847**	g/cm^3 u primljenom stanju	DE1.0 ≥ 1,0	DE0.9 ≥ 0,9	**DE0.9 ≥ 0,9**
Aditivi[c]	% m u primljenom stanju	≤ 2 Navode se tip i količina	≤ 2 Navode se tip i količina	**≤ 2** **Navode se tip i količina**
Neto kalorijska vrednost,	MJ/kg ili	Q15,5 ≥ 15,5 ili	Q15,3 ≥ 15,3 ili	**Q14,9 ≥ 14,9 ili**

Q, ISO 18125	kWh/kg u primljenom stanju	Q4,3 ≥ 4,3	Q4,25 ≥ 4,25	**Q4,15 ≥ 4,15**
Azot, N, ISO 16948	% m suv	N0.3 ≤ 0,3	N0.5 ≤ 0,5	**N1.0 ≤ 1,0**
Sumpor, S, ISO 16994	% m suv	S0.04 ≤ 0,04	S0.04 ≤ 0,04	**S0.05 ≤ 0,05**

a Klasa B se ne preporučuje za furune.

b Prihvatljivi su zanemarljivi nivoi lepka, masti i drugih aditiva koji se koriste u pilanama tokom proizvodnje građe i proizvoda od potpuno prirodnog drveta ako su svi hemijski parametri briketa koji se jasno nalaze u okviru granica i/ili koncentracija premali da bi se na njih obratila pažnja.

c Tip aditiva koji se koristi za poboljšanja u proizvodnji, isporuci ili sagorevanju (npr. sredstva za zgušnjavanje, dodaci za sprečavanje nastanka šljake ili drugi aditivi kao što su skrob, kukuruzno brašno, krompirovo brašno, biljno ulje, lignin).

Drvni briketi se obračunavaju i isporučuju po težini (kilogram ili tona). Prilikom isporuke najznačajnije karakteristike, pored težine, koje se kontrolišu su vlaga, sadržaj pepela i neto kalorijska vrednost. Kada je u pitanju vlaga u najboljoj A1 klasi kvaliteta ona ne sme da pređe 12%, dok je maksimalno učešće pepela 1% maseni procenat u odnosu na suvo stanje. Neto kalorijska vrednost u A1 klasi kvaliteta mora da bude jednaka ili veća od 4,3 kWh/kg u primljenom stanju. U pogledu emisije azota i sumpora u procesu sagorevanja u A1 klasi kvaliteta njihove vrednosti su maksimalno 0,3% masena procenta u odnosu na suvo stanje za azot i maksimalno 0,04% masena procenta u odnosu na suvo stanje za sumpor.

Klasa A2 dozvoljava malo viši sadržaj pepela i azota dok klasa B dozvoljava brikete proizvedene od hemijski tretirane biomase industrijskih sporednih proizvoda, ostataka od drveta i hemijski netretiranog korišćenog drveta.

2.4 Drvne pelete

Drvne pelete predstavljaju zgusnuto biogorivo proizvedeno od drvne biomase sa ili bez aditiva obično cilindričnog oblika, nasumične dužine najčešće od 5 mm do 40 mm, prečnika do 25 mm i pokidanih krajeva.

Peleti se obično proizvode u matrici, a ukupan sadržaj vlage je obično manji od 10 % mase u vlažnom stanju. Standard SRPS EN ISO 17225-2:2015 razlikuje drvne pelete za komercijalnu i upotrebu u stambenim prostorima i drvne pelete za industrijsku upotrebu. U zavisnosti od namene definisani su i odgovarajući parametri pojedinih karakteristika.

Pregled vrednosti najznačajnijih parametara pojedinih karakteristika drvnih peleta **za komercijalnu i upotrebu u stambenim prostorima** dat je u sledećoj tabeli (prema SRPS EN ISO 17225-2:2015).

KLASA SVOJSTVA	JEDINICA	A1	A2	B
Poreklo i izvor ISO 17225-1		1.1.3 Deblo 1.2.1 Hemijski netretirani ostaci od drveta [a]	1.1.1 Cela stabla bez korena 1.1.3 Deblo 1.1.4 Ostaci od seče 1.2.1 Hemijski netretirani ostaci od drveta [a]	**1.1 Drvo iz šuma i plantaža i drugo potpuno prirodno drvo** **1.2 Sporedni proizvodi i ostaci iz industrijske prerade drveta** **1.3.1 Hemijski netretirano korišćeno drvo**

Prečnik, D [b] i Dužina L [c] **ISO 17829**	mm	D06, 6 ± 1; 3,15 < L ≤ 40 D08, 8 ± 1; 3,15 < L ≤ 40	D06, 6 ± 1; 3,15 < L ≤ 40 D08, 8 ± 1; 3,15 < L ≤ 40	**D06, 6 ± 1;** **3,15 < L ≤ 40** **D08, 8 ± 1;** **3,15 < L ≤ 40**
Vlaga, M, ISO 18134-1, ISO 18134-2	% m u primljenom stanju, vlažno stanje	M10 ≤ 10	M10 ≤ 10	**M10 ≤ 10**
Pepeo, A [d] **ISO 18122**	% m suv	A0.7 ≤ 0,7	A1.2 ≤ 1,2	**A2.0 ≤ 2,0**
Mehanička postojanost, DU, ISO 17831-1	% m u primljenom stanju	DU97.5 ≥ 97,5	DU97.5 ≥ 97,5	**DU96.5 ≥ 96,5**
Sitne čestice, F [e] **ISO 18846**	% m u primljenom stanju	F1.0 ≤ 1,0	F1.0 ≤ 1,0	**F1.0 ≤ 1,0**
Aditivi [f]	% m u primljenom stanju	≤ 2 Navode se tip i količina	≤ 2 Navode se tip i količina	**≤ 2** **Navode se tip i količina**
Neto kalorijska vrednost, Q, **ISO 18125**	MJ/kg ili kWh/kg u primljenom stanju	Q16.5 ≥ 16,5 ili Q4.6 ≥ 4,6	Q16.5 ≥ 16,5 ili Q4.6 ≥ 4,6	**Q16.5 ≥ 16,5 ili** **Q4.6 ≥ 4,6**
Nasipna gustina, BD [g] **ISO 17828**	kg/m^3 u primljenom stanju	BD600 ≥ 600	BD600 ≥ 600	**BD600 ≥ 600**
Azot, N, **ISO 16948**	% m suv	N0.3 ≤ 0,3	N0.5 ≤ 0,5	**N1.0 ≤ 1,0**
Sumpor, S, **ISO 16994**	% m suv	S0.04 ≤ 0,04	S0.05 ≤ 0,05	**S0.05 ≤ 0,05**

a Prihvatljivi su zanemarljivi nivoi lepka, masti i drugih aditiva koji se koriste u pilanama tokom proizvodnje građe i proizvoda od potpuno prirodnog drveta ako su svi hemijski parametri peleta koji se jasno nalaze u okviru granica i/ili koncentracija premali da bi se na njih obratila pažnja.

b Navodi se odabrana veličina peleta D06 ili D08.

c Količina peleta koji su duži od 40 mm može da bude 1% m. Najveća dužina mora da bude ≤ 45 mm. Peleti su duži od 3,15 mm ako ostanu na situ sa okruglim otvorima prečnika 3,15 mm. Preporučuje se da se navede količina peleta koji su kraći od 10 mm, % m.

d Za gorionike i peći u domaćinstvima, preporučuje se sadržaj pepela < 0,5 %.

e Na izlazu iz procesa proizvodnje za transport u nasutom stanju (u vreme utovara) i u malim (do 20 kg) i velikim vrećama (u vreme pakovanja) ili prilikom isporuke krajnjem korisniku.

f Tip aditiva koji se koristi za poboljšanja u proizvodnji, isporuci ili sagorevanju (npr. sredstva za zgušnjavanje, dodaci za sprečavanje nastanka šljake ili drugi aditivi kao što su skrob, kukuruzno brašno, krompirovo brašno, biljno ulje, lignin).

g Preporučuje se da se navede konkretna vrednost nasipne gustine. To je naročito važno za gorionike i peći u domaćinstvima koji ne poseduju automatsku kontrolu dovoda vazduha te su zato osetljivi na variranja nasipne gustine. Najveća vrednost nasipne gustine 750 kg/m^3.

Drvne pelete se obračunavaju i isporučuju po težini (kilogram ili tona). Prilikom isporuke najznačajnije karakteristike, pored težine, koje se kontrolišu su vlaga, sadržaj pepela i neto kalorijska vrednost. U poređenju sa briketima minimalna neto kalorijska vrednost drvnih peleta je veća u svim klasama kvaliteta i iznosi više ili jednako 4,6 kWh/kg. Nivo maksimalne vlage drvne pelete ne sme preći 10% masenih procenata u primljenom stanju (vlažna osnova). Zbog karakteristika uređaja u kojima sagorevaju drvne pelete količina pepela koji ostaje nakon njihovog sagorevanja u A1 klasi kvaliteta ne sme preći 0,7% masenih procenata u odnosu na suvo stanje. Ovo je izuzetno strog kriterijum zbog čega se u A1 klasi kvaliteta drvni pelet mora proizvoditi od čistog drveta bez ili sa veoma malim učešćem kore.

Kada su u pitanju **drvne pelete za industrijsku upotrebu** kriterijumi u pogledu kvaliteta su nešto drugačiji. Prema standardu SRPS EN ISO 17225-2:2015 drvne pelete za industrijsku upotrebu su podeljene u tri klase: I1, I2 i I3. Vrednosti parametara pojedinih svojstava drvnih peleta unutar navedenih klasa date su u sledećoj tabeli.

KLASA SVOJSTVA	JEDINICA	I1	I2	I3
Poreklo i izvor **ISO 17225-1**		1.1 Drvo iz šuma i plantaža i drugo potpuno prirodno drvo 1.2.1 Hemijski netretirani ostaci od drveta [a]	1.1 Drvo iz šuma i plantaža i drugo potpuno prirodno drvo 1.2.1 Hemijski netretirani ostaci od drveta [a]	**1.1 Drvo iz šuma i plantaža i drugo potpuno prirodno drvo** **1.2 Sporedni proizvodi i ostaci iz industrijske prerade drveta** **1.3.1 Hemijski netretirano korišćeno drvo**
Prečnik, D [b] i Dužina L [c] **ISO 17829**	mm	D06, 6 ± 1; 3,15 < L ≤ 40 D08, 8 ± 1; 3,15 < L ≤ 40	D06, 6 ± 1; 3,15 < L ≤ 40 D08, 8 ± 1; 3,15 < L ≤ 40 D10, 10 ± 1; 3,15 < L ≤ 40	**D06, 6 ± 1;** **3,15 < L ≤ 40** **D08, 8 ± 1;** **3,15 < L ≤ 40** **D10, 10 ± 1;** **3,15 < L ≤ 40** **D12, 12 ± 1;** **3,15 < L ≤ 40**
Vlaga, M, **ISO 18134-1, ISO 18134-2**	% m u primljenom stanju	M10 ≤ 10	M10 ≤ 10	**M10 ≤ 10**
Pepeo, A, ISO 18122	% m suv	A1.0 ≤ 1,0	A1.5 ≤ 1,5	**A3.0 ≤ 3,0**
Mehanička postojanost, DU, ISO 17831-1	% m u primljenom stanju	97,5 ≤ DU ≤ 99,0	97,0 ≤ DU ≤ 99,0	**96,5 ≤ DU ≤ 99,0**
Sitne čestice, F [d] **ISO 18846**	% m u primljenom stanju	F4.0 ≤ 4,0	F5.0 ≤ 5,0	**F6.0 ≤ 6,0**
Aditivi [e]	% m u primljenom stanju	< 3 Navode se tip i količina	< 3 Navode se tip i količina	**< 3** **Navode se tip i količina**
Neto kalorijska vrednost, Q, ISO 18125	MJ/kg u primljenom stanju	Q16.5 ≥ 16,5	Q16.5 ≥ 16,5	**Q16.5 ≥ 16,5**

Nasipna gustina, BD[f], ISO 17828	kg/m^3	BD600 ≥ 600	BD600 ≥ 600	**BD600 ≥ 600**
Azot, N, ISO 16948	% m suv	N0.3 ≤ 0,3	N0.3 ≤ 0,3	**N0.6 ≤ 0,6**
Sumpor, S, ISO 16994	% m suv	S0.05 ≤ 0,05	S0.05 ≤ 0,05	**S0.05 ≤ 0,05**

a Prihvatljivi su zanemarljivi nivoi lepka, masti i drugih aditiva koji se koriste u pilanama tokom proizvodnje građe i proizvoda od potpuno prirodnog drveta ako su svi hemijski parametri peleta koji se jasno nalaze u okviru granica i/ili koncentracija premali da bi se na njih obratila pažnja.

b Navodi se odabrana veličina peleta D06, D08, D10 ili D12.

c Količina peleta koji su duži od 40 mm može da bude 1 % m. Najveća dužina mora da bude ≤ 45 mm. Peleti su duži od 3,15 mm ako ostanu na situ sa okruglim otvorima prečnika 3,15 mm. Preporučuje se da se navede količina peleta koji su kraći od 10 mm, % m.

d Na izlazu iz procesa proizvodnje za transport u nasutom stanju (u vreme utovara) i u malim (do 20 kg) i velikim vrećama (u vreme pakovanja ili prilikom isporuke krajnjem korisniku).

e Tip aditiva koji se koristi za poboljšanja u proizvodnji, isporuci ili sagorevanju (npr. sredstva za zgušnjavanje, dodaci za sprečavanje nastanka šljake ili drugi aditivi kao što su skrob, kukuruzno brašno, krompirovo brašno, biljno ulje, lignin).

f Najveća nasipna gustina je 750 kg/m^3.

Najznačajnije razlike u parametrima za drvne pelete za industrijsku upotrebu u odnosu na komercijalnu i upotrebu u stambenim objektima odnose se na dozvoljene dimenzije, pepeo i mehaničku postojanost. U tom smislu kod drvnih peleta za industrijsku upotrebu u I2 klasi kvaliteta dozvoljeno je korišćenje drvnih peleta prečnika 6 mm - 10 mm, a u I3 klasi 6 mm - 12 mm. Dozvoljena količina pepela u **I1** klasi je do 1% masenog procenta u odnosu na suvo stanje, a u **I3** klasi do 3% masena procenta. Učešće sitne frakcije iznosi do 4% masena procenta u primljenom stanju u I1 klasi kvaliteta do 6% masenih procenata u primljenom stanju u I3 klasi kvaliteta. To su značajno veće vrednosti u odnosu na klase kvaliteta za komercijalnu i upotrebu u stambenim objektima.

2.5 Drveni ugalj

Drveni ugalj predstavlja čvrsto biogorivo dobijeno karbonizacijom, destilacijom i pirolizom biomase. Polazna sirovina za njegovu proizvodnju predstavlja potpuno prirodno drvo iz šuma i izvan šuma, biomasa od voćaka i biomasa iz hemijski netretiranih sporednih proizvoda i ostataka koji nastaju u industrijskoj preradi drveta.

Proizvodnja drvenog uglja obavlja se najčešće na dva načina:

- tradicionalnim metodama pougljavanja drveta u ćumuranama i
- industrijskom metodama pougljavanja drveta u retortama.

Bez obzira o kom načinu proizvodnje drvenog uglja se radilo standard SRPS EN ISO 17225-1:2015 definiše nivo vlage, dimenzije i učešće pojedinih frakcija u ukupno isporučenoj količini drvenog uglja, količinu pepela, iznos fiksnog ugljenika i nasipnu gustinu. U sledećoj tabeli date su vrednosti parametara za pojedine karakteristike od značaja za trgovinu drvenim ugljem.

Poreklo		Drvo iz šuma i plantaža i drugo potpuno prirodno drvo Hemijski netretirani sporedni proizvodi i ostaci od drveta; Biomasa od voćaka	
Oblik u kojem se trguje		Drveni ugalj	
Dimenzije (mm)			
	Glavne frakcije (najmanje 75 % m), mm	Sitne frakcije, % m (<10 mm)	Krupne frakcije, (% m), najveća dužina čestice, mm
P150	16 mm ≤ *P* ≤ 150 mm	≤ 7 %	≤ 10 % > 100 mm, a sve < 150mm
Vlaga, M (% m u primljenom stanju) ISO 18134-1, ISO 18134-2			
M8 M10	≤ 8 % ≤ 10 %		
Pepeo, A (% m suvog stanja) ISO 18122			
A5.0 A8.0 A8.0+	≤ 5,0 % ≤ 8,0 % > 8,0 % (navodi se najveća vrednost)		
Fiksni ugljenik, C[a] (% m suvog stanja)			
C60 C75	≥ 60 % ≥ 75 %		
Nasipna gustina (BD) (kg/m^3 u primljenom stanju) ISO 17828			
BD130 BD150	≥ 130 kg/m^3 ≥ 150 kg/m^3		
Neto kalorijska vrednost, Q (MJ/kg ili kWh/kg u primljenom stanju) ISO 18125			Navodi se najmanja vrednost

[a] Fiksni ugljenik (%) se izračunava na sledeći način: 100 – [vlaga (% m) + pepeo (% m) + isparljiva materija (% m)]. Svi procenti su za isto stanje vlage.

3 PREGLED SRPS EN ISO STANDARDA I AKREDITOVANIH LABORATORIJA ZA ISPITIVANJE DRVNIH GORIVA U SRBIJI

Uporedo sa razvojem proizvodnje različitih tipova drvnih goriva razvijali su se i odgovarajući standardi za potrebe provere njihovog kvaliteta i ostalih parametara koji su od značaja za krajnju potrošnju.

U tom smislu u Evropi su se najpre razvili standardi za drvna goriva u Nemačkoj, Austriji i Švedskoj. Nacionalni standardi ovih zemalja predstavljali su bazu za razvoj jedinstvenih evropskih standarda za drvna goriva u okviru evropskog Komiteta za standardizaciju. U januaru 2010. godine na nivou Evrope usvojeni su standardi za drvna goriva pod oznakom EN 14961/1-5:2010.

Intenzivni razvoj trgovine pojedinim drvnim gorivima, a pre svega drvnim peletama, u poslednjih nekoliko godina uticao je da se pri ISO organizaciji razviju standardi za drvna goriva koji se primenjuju u proizvodnji i trgovini na globalnom nivou. Evropski Komitet za standardizaciju, a samim tim i Institut za standardizaciju Srbije prihvatili su ove standarde 2015. godine tako da su u Evropi, a i u Srbiji usvojeni novi standardi za drvna goriva pod oznakom **SRPS EN ISO 17225/1-5:2015.** U okviru ove grupe standarda definisani su standardi za sve tipove drvnih goriva pojedinačno:

SRPS EN ISO 17225-1/2015: Specifikacije i klase goriva— Deo 1:Opšti zahtevi

SRPS EN ISO 17225-2/2015: Specifikacije i klase goriva — Deo 2: Klasiranje drvnih peleta

SRPS EN ISO 17225-2/2015: Specifikacije i klase goriva — Deo 3: Klasiranje drvnog briketa

SRPS EN ISO 17225-2/2015: Specifikacije i klase goriva — Deo 4: Klasiranje drvne sečke

SRPS EN ISO 17225-2/2015: Specifikacije i klase goriva — Deo 5: Klasiranje ogrevnog drveta

U okviru navedene grupe standarda navedeni su pojedinačni standardi iz ISO grupe standarda po kojima se vrši ispitivanje pojedinačnih karakteristika. Tako na primer, ispitivanje sadržaja vlage drvnih goriva vrši se prema standardu ISO 18134/1-2, a neto kalorijske vrednosti prema standardu ISO 18125. Za ispitivanje ostalih parametara kod različitih tipova drvnih goriva primenjuju se različiti ISO standardi.

U trenutku izrade ovog Kataloga u Srbiji se ispitivanjem karakteristika drvnih goriva u celosti bavi akreditovana jedino laboratorija **JUGOINSPEKT, a.d. iz Beograda**. Ispitivanjem pojedinih karaketristika drvnih goriva (ali ne svih onako kako predviđaju standardi) bave se i sledeće laboratorije:

1. SGS iz Beograda
2. Laboratorija za ispitivanje ploča iverica na Šumarskom fakultetu u Beogradu
3. Laboratorija za goriva i sagorevanje na Mašinskom fakultetu u Beogradu
4. Laboratorija termoelektrane Nikola Tesla u Obrenovcu

Navedene laboratorije su opremljene uređajima za ispitivanje pojedinih karakteristika koje su definisane standardima iz grupe SRPS EN ISO 17225 (najčešće sadržaja pepela, vlage, kalorijske vrednosti i dimenzija). Ove laboratorije još uvek nisu u potpunosti opremljene za ispitivanje svih karakteristika drvnih goriva koje su navedene u ovoj grupi standarda.

Za praćenje karakteristika drvnih peleta u svojoj proizvodnji nekoliko proizvođača drvnih peleta u Srbiji poseduje pojedinačne uređaje za određivanje najčešće njihove vlage i mehaničke postojanosti.

Očekuje se da će se donošenjem tehničkog propisa za drvna goriva broj laboratorija za ispitivanje njihovih karakteristika povećavati jer će za to postojati komercijalni interes.

4 OPIS POJEDINIH PARAMETARA TRGOVAČKIH KODOVA

4.1 Zajednički elementi

Za svaki proizvod u ovom Katalogu definisani su opšti i posebni parametri. Opšti parametri proizvoda obuhvatili su:

- tip proizvoda
- vrstu drveta
- sadržaj vode (vlaga drveta)
- dimenzije i
- jedinicu mere.

Poseban parametar za pojedine proizvode predstavljaju klase kvaliteta u kojima se proizvode i distribuiraju ovi proizvodi.

Ovakav pristup je rezultat odredbi standarda na kojima se zasniva ovaj Katalog zbog činjenice da različite klase kvaliteta obuhvataju različite vrednosti pojedinih parametara koje se moraju uvažavati i uzeti u obzir u procesu trgovine.

Karakteristike proizvoda i njihovi parametri su predstavljeni u pojedinačnim tabelama u okviru tačke 3 ovog Kataloga, a njihov trgovački kod kao skraćenica parametara po sledećem redosledu:

Trgovački kod = tip proizvoda_vrsta drveta_vlaga_jedinica mere.

Za pojedine proizvode za koje je to bilo neophodno, zbog odredbi standarda i potrebe da se trgovina učini jednostavnijom i razumljivijom, dati su još**: klasa kvaliteta i dimenzije.** Trgovački kod za takve proizvode obuhvata 5 cifara, i to:

Trgovački kod = tip proizvoda_vrsta drveta_vlaga_klasa_dimenzije_jedinica mere.

Svi izabrani parametri koji su uključeni u trgovački kod su merljivi i kao takvi olakšavaju trgovinu i smanjuju mogućnost nesporazuma između učesnika u tom procesu.

U nastavku su date najznačajnije karakteristike pojedinih parametara.

4.1.1 Tip proizvoda

Za potrebe trgovine na berzi biomase dati su parametri za sledeće tipove proizvoda:

- višemetarsku oblovinu;
- ogrevno drvo (metarsko i cepano);
- drvnu sečku;
- drvne brikete;
- drvne pelete;
- piljevinu od drveta;
- okorke;

- drvne ostatke od rezanja;
- drveni ugalj i
- koru.

Izabrani proizvodi predstavljaju najznačajnije i u praksi najzastupljenije tipove proizvoda sa kojima se trguje. Pri tom navedena trgovina obuhvata trgovinu pojedinačnim proizvodima. Međutim, u praksi je moguća trgovina i nekim kombinacijama ovih proizvoda kao na primer ,,Kombinacija piljevine i drvne sečke''. Kombinacije glavnih proizvoda se vrlo retko sreću u praksi i pri tom ne postoje utvrđeni odnosi između pojedinih proizvoda u ukupnoj količini ili zapremini koja je predmet trgovine. Iz tog razloga, i pored činjenice što trgovački kodovi koji su dati u tabelama za pojedine tipove proizvoda u ovom Katalogu obuhvataju veliki broj kombinacija, ukoliko se desi da se želi ponuditi neka kombinacija proizvoda koja nije sadržana u trgovačkim kodovima u ovom Katalogu moguće je u polju OSTALI PROIZVODI uneti bliži opis proizvoda ili kombinacije proizvoda koja se nudi. Na primer, ukoliko potencijalni ponuđač želi da ponudi proizvod koji obuhvata kombinaciju piljevine i drvne sečke to može uraditi u polju OSTALI PROIZVODI unoseći naziv ,,Drvna sečka u kombinaciji sa piljevinom'', a zatim je potrebno da ponuđeni proizvod detaljnije opiše.

4.1.2 Vrste drveta

Proizvodi od drvne biomase proizvode se i distribuiraju na tržište kao proizvodi koji su proizvedeni od samo jedne vrste drveta ili kao proizvodi koji su proizvedeni u kombinaciji dve ili više drvnih vrsta. S obzirom da energetska vrednost ili tzv. neto kalorijska vrednost goriva u primljenom stanju zavisi od vrste drveta, njegove gustine, vlage i hemijske strukture to je neophodno da se u trgovačkom kodu svakog od navedenih proizvoda nalazi odgovarajuća oznaka po kojoj se može prepoznati da li je neko drvno gorivo proizvedeno od samo jedne drvne vrste i koje ili kao mešavina drvnih vrsta. U tom smislu, za potrebe ovog Kataloga izvršena je klasifikacija drvnih vrsta u sledeće grupe:

- tvrdi lišćari (hrast, bukva, jasen, javor, itd.);
- meki lišćari (topola, vrba, lipa, itd.);
- četinari (smrča, jela, bor, itd.) i
- mešavina drvnih vrsta (tvrdi lišćari/četinari, itd.).

4.1.3 Sadržaj vode (vlaga drveta)

Sadržaj vode ili vlaga drveta se definiše kao odnos između mase vode i mase drveta u vlažnom stanju (relativna vlažnost) ili mase vode i mase drveta u apsolutno suvom stanju (apsolutna vlažnost). U trgovini drvnim gorivima najčešće se koristi relativna vlažnost drveta (goriva) izražena u procentima.

Imajući u vidi da je drvo higroskopan materijal (prima i otpušta vodu u zavisnosti od relativne vlažnosti vazduha) i s tim u vezi različit nivo vlage u zavisnosti od vremena koje protekne od momenta seče do momenta upotrebe, za potrebe ovog Kataloga izvršena je podela drveta sa stanovišta njegove vlažnosti na:

- **sirovo drvo** (sveže posečeno drvo sa vlažnošću preko 40%);
- **prosušeno** drvo (drvo sa vlažnošću 20%-40%. Obuhvata drvo koje se prosušivalo najmanje 6 meseci nakon sečenja ili drvo iz zimske seče kod koga je proteklo najmanje 4 meseca nakon sečenja);
- **vazdušno suvo** (drvo sa vlažnošću najčešće 15%-20%. Obuhvata drvo koje se prosušivalo najmanje godinu dana u osunčanim i prozračnim skladištima);

- **suvo drvo** (drvo sa vlažnošću 6%-15%. Obuhvata veštački sušeno drvo u sušarama za drvo).

Navedena podela drveta sa stanovišta njegove vlažnosti je korišćena u ovom Katalogu za sledeće tipove proizvoda: višemetarsku oblovinu, okorke, drvne ostatke od rezanja i piljevinu.

Za ostale tipove proizvoda procenat vlažnosti je definisan standardima za pojedine klase u kojima se ova goriva proizvode i distribuiraju na tržište. Tako na primer oznaka M30 označava da je za taj nivo vlažnosti dozvoljena vlaga u gorivu u iznosu manje ili jednako 30% (≤ 30).

Vrednosti vlage koje su date u odgovarajućim tabelama se odnose na vlagu koju gorivo sadrži u isporučenom stanju (relativna vlažnost).

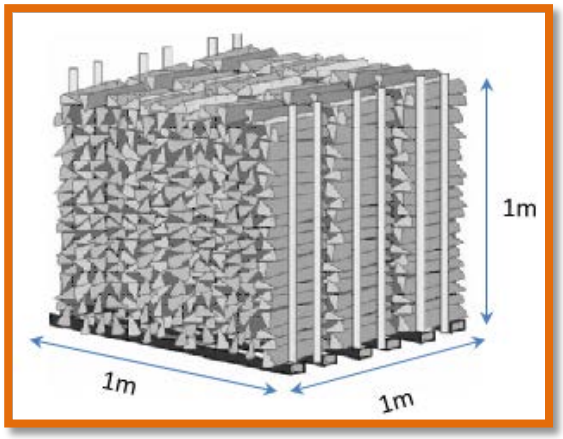
4.1.4 Dimenzije

Za sve tipove drvnih goriva u ovom Katalogu date su standardne dimenzije u kojima se oni najčešće proizvode i distribuiraju na tržište. Dimenzije obuhvataju i odgovarajuća odstupanja od nazivne mere izražena kao ± određeni iznos u jedinici mere. Na primer: ogrevno drvo metarsko ima nazivnu meru od 100 cm, a dozvoljena odstupanja su ±5 cm. Trgovačka oznaka ove dimenzije je L100 ≤ 100 (±5 cm).

4.1.5 Jedinice mere

U zavisnosti od najčešće zastupljenog načina po kojem se vrši promet drvnih goriva za potrebe ovog kataloga korišćene su sledeće jedinice mera:

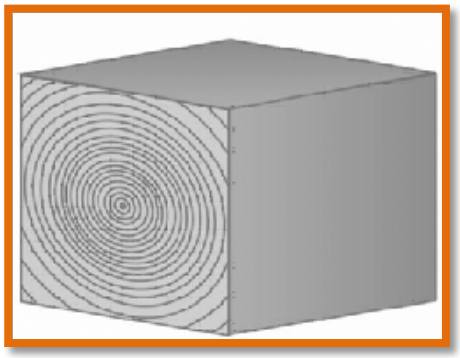
Prostorni metar (prm) predstavlja jedinicu mere za drvo koje je složeno tako da zauzima prostor od 1 m^3 sa međuprostorom između cepanica, oblica ili komada unutar tog složaja.



Prostorni metar kubni se najčešće koristi kao jedinica mere za ogrevno drvo i okorke.

Nasipni metar kubni (nm) predstavlja jedinicu mere za materijale u rasutom stanju (na primer: drvna sečka, piljevina, komadi cepanog drveta, kora). Nasipni metar kubni predstavlja složaj zapremine 1 m^3 unutar koga se nalaze komadi nasumično složenog drveta (kada se radi o cepanom drvetu) ili unutar koga se nalazi drvna sečka ili piljevina ili kora nasuti iz utovarivača bez posebnog slaganja (sabijanja).

Kubni metar (m^3) predstavlja jedinicu mere kompaktnog drveta zapremine 1 m^3. Najčešće se koristi za izražavanje zapremine višemetarske oblovine u šumarstvu kao i za izražavanje zapremine za proizvode od drveta u preradi drveta.

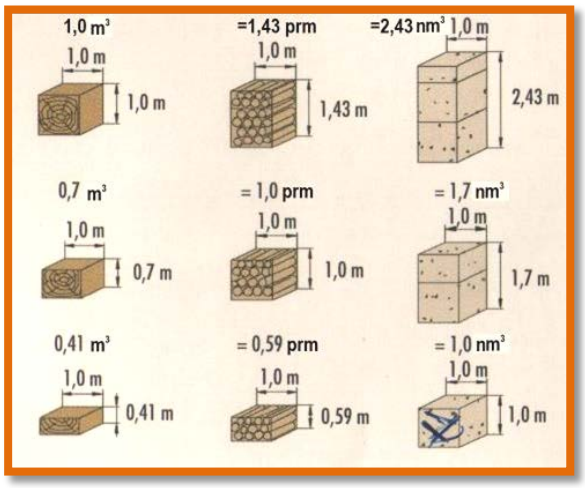


U cilju lakše trgovine (kupovine i prodaje) različitim oblicima drvnih goriva u praksi se koriste odgovarajući koeficijenti za preračunavanje njihovih jedinica mere (tabela 1).

Tabela 1. Jedinice mere pojedinih tipova drvnih goriva i koeficijenti za njihovo preračunavanje

Sortimenti	Kompaktno drvo (solid wood)	Ogrevno drvo metarsko	Ogrevno drvo cepano		Drvna sečka	
			složeno	rasuto	Dimenzija (finoća) G30	Dimenzija (finoća) G50
	m^3	prm	prm	nm^3	nm^3	nm^3
1 m^3 kompaktnog drveta (solid wood)	1	1,43	1,2	2,0	2,43	3,03
1 prm ogrevnog drveta metarskog	0,7	1	0,8	1,4	1,7	2,1
1 prm ogrevnog cepanog drveta složenog	0,85	1,2	1	1,7		
1 nm^3 (nasipni metar) ogrevnog cepanog drveta u nasutom stanju	0,5	0,7	0,6	1		
1 nm^3 drvne sečke finoće G30	0,41	0,59			1	1,2
1 nm^3 drvne sečke finoće G50	0,33	0,48			0,8	1

Izvor: Glavonjić B. 2012



Primer korišćenja koeficijenata za konverziju jedinica mere različitih vrsta drvnih sortimenata u metre kubne kompaktnog drveta (izvor: Glavonjić B. 2012):

4.1.6 Pregled skraćenica za pojedine parametre od značaja za definisanje trgovačkog koda

Za potrebe formiranja trgovačkog koda za proizvode u okviru ovog Kataloga korišćene su sledeće skraćenice (bazirano na prethodno opisanim elementima):

I. Skraćenice za pojedine tipove drvnih proizvoda (goriva)

TIP PROIZVODA	SKRAĆENICA
Višemetarska oblovina	VM
Ogrevno drvo metarsko - cepanice	CE
Ogrevno drvo metarsko - oblice	OB
Ogrevno drvo - cepano	CD
Drvna sečka	DS
Drvni briketi	DB
Drvni peleti za komercijalnu upotrebu	DPK
Drvni peleti za industrijsku upotrebu	DPI
Piljevina od drveta	PI
Okorci	OK
Drvni ostaci od rezanja	DO
Drveni ugalj	DU

Kora	KO

II. Skraćenice za pojedine grupe drvnih vrsta

NAZIV GRUPE	SKRAĆENICA
Lišćari	L
Tvrdi lišćari	TL
Meki lišćari	ML
Četinari	CT
Mešavina drvnih vrsta	ME

III. Skraćenice jedinica mere

NAZIV JEDINICE MERE	SKRAĆENICA
Prostorni metar kubni	PRM
Nasipni metar kubni	NM
Kubni metar	KM
Kilogram	KG

IV. Skraćenice koje se odnose na vlagu drveta

NAZIV JEDINICE MERE	SKRAĆENICA
Sirovo	S
Prosušeno	P
Vazdušno suvo	VS
Suvo	SU

Klase kvaliteta u trgovačkom kodu specificirane su standardom SRPS EN ISO 17225/1-5:2015, a od karakteristika koje su od značaja za trgovinu drvnim gorivima u okviru pojedinih klasa obavezno se navode dimenzije i vlaga.

4.2 Primeri formiranja trgovačkog koda

Na osnovu prethodno iznetih elemenata u nastavku su data dva primera formiranja trgovačkog koda za dva slučajno odabrana proizvoda na bazi drvne biomase.

Primer 1. Proizvođač metarskog ogrevnog drveta želi da ponudi na berzu biomase 60 prm drveta bukve u obliku cepanica u A2 klasi kvaliteta. Drvo je prosušivano oko 7 meseci tako da je njegova izmerena vlažnost 25%. Definisati trgovački kod kojim bi proizvođač na vrlo jednostavan i razumljiv način ponudio berzi biomase proizvod navedenih parametara?

Trgovački kod za navedeni primer obuhvata:

prva cifra: tip proizvoda.....cepano metarsko ogrevno drvo u obliku cepanica (**CE**)

druga cifra: grupu drvne vrste.....tvrdi lišćari (**TL**)

treća cifra: klasu kvaliteta prema SRPS EN ISO 17225-5 standardu.....**A2**

četvrta cifra: nivo vlažnosti.....**M25** (vlaga od ≤ 25%)

peta cifra: jedinicu mere.....prostorni metar kubni (**PRM**)

Trgovački kod za primer 1 bi glasio: **CE_TL_A2_M25_PRM**

Primer 2. Proizvođač drvne sečke proizvedene od četinarskog drveta bi želeo da ponudi na berzu biomase količinu od 400 nasipnih metara kubnih. Veličina komada glavne frakcije je u rasponu 3,15 mm < *P* ≤ 31,5 mm. Vlažnost drvne sečke iznosi 35%. Navedeni parametri odgovaraju klasi kvaliteta A2. Definisati trgovački kod kojim bi proizvođač na vrlo jednostavan i razumljiv način ponudio berzi biomase proizvod navedenih parametara?

Trgovački kod za navedeni primer obuhvata:

prva cifra: tip proizvoda.....drvna sečka (**DS**)

druga cifra: grupu drvne vrste.....četinari (**CT**)

treća cifra: klasu kvaliteta prema SRPS EN ISO 17225-4 standardu.....**A2**

četvrta cifra: dimenzije komada glavne frakcije (prema standardu SRPS EN ISO 17225-4)..**P31S**

peta cifra: nivo vlažnosti..... .....**M35** (vlaga od ≤ 35%)

šesta cifra: jedinicu mere.....nasipni metar kubni (**NM**)

trgovački kod za primer 2 bi glasio: **DS_CT_A2_P31S_M35_PRM**

Za pojedine tipove drvnih goriva kao što su višemetarsko oblo drvo za energiju, piljevina, okorci i drvni ostaci od rezanja trgovački kod sadrži 4 cifre (bez oznake klase kvaliteta i dimenzija).

U nastavku su dati tabelarni prikazi trgovačkih kodova sa karakteristikama za svaki od navedenih tipova drvnih goriva.

5 TRGOVAČKI KODOVI ZA POJEDINE TIPOVE PROIZVODA OD BIOMASE

5.1 Trgovački kod za višemetarsku oblovinu za energiju

GENERIC CODE	VM (VIŠEMETARSKA OBLOVINA ZA ENERGIJU)

Tip proizvoda	Trgovački kod	Vrsta drveta	Vlaga	Jedinica mere	Dimenzije (m)	Izgled
VM_001	VM_TL_S_KM	Tvrdi lišćari	Sirovo	Kubni metar	Preko 1,0 m	
VM_002	VM_ML_S_KM	Meki lišćari	Sirovo	Kubni metar	Preko 1,0 m	
VM_003	VM_CT_S_KM	Četinari	Sirovo	Kubni metar	Preko 1,0 m	
VM_004	VM_ME_S_KM	Mešavina drvnih vrsta	Sirovo	Kubni metar	Preko 1,0 m	
VM_005	VM_TL_P_KM	Tvrdi lišćari	Prosušeno	Kubni metar	Preko 1,0 m	
VM_006	VM_ML_P_KM	Meki lišćari	Prosušeno	Kubni metar	Preko 1,0 m	
VM_007	VM_CT_P_KM	Četinari	Prosušeno	Kubni metar	Preko 1,0 m	
VM_008	VM_ME_P_KM	Mešavina drvnih vrsta	Prosušeno	Kubni metar	Preko 1,0 m	

Višemetarska oblovina za energiju predstavlja oblovinu koja po svojim karakteristikama ne zadovoljava kriterijume pilanske prerade drveta, proizvodnje furnira i ostalih proizvoda od drveta za koje se zahteva odgovarajući kvalitet.

5.2 Trgovački kod za ogrevno drvo metarsko u obliku cepanica

GENERIC CODE	CE (OGREVNO DRVO METARSKO-CEPANICE)

Tip proizvoda	Trgovački kod	Vrsta drveta	Klasa kvaliteta	Vlaga u primljenom stanju (%)	Jedinica mere	Dužina u cm	Izgled
CE_001	CE_TL_A1_M20_PRM	Tvrdi lišćari	A1	M20 ≤ 20	Prostorni metar	L100 ≤ 100 (±5 cm)	
CE_002	CE_TL_A1_M25_PRM	Tvrdi lišćari	A1	M25 ≤ 25	Prostorni metar	L100 ≤ 100 (±5 cm)	
CE_003	CE_TL_A2_M20_PRM	Tvrdi lišćari	A2	M20 ≤ 20	Prostorni metar	L100 ≤ 100 (±5 cm)	
CE_004	CE_TL_A2_M25_PRM	Tvrdi lišćari	A2	M25 ≤ 25	Prostorni metar	L100 ≤ 100 (±5 cm)	
CE_005	CE_TL_B_M20_PRM	Tvrdi lišćari	B	M20 ≤ 20	Prostorni metar	L100 ≤ 100 (±5 cm)	
CE_006	CE_TL_B_M25_PRM	Tvrdi lišćari	B	M25 ≤ 25	Prostorni metar	L100 ≤ 100 (±5 cm)	
CE_007	CE_TL_B_M35_PRM	Tvrdi lišćari	B	M35 ≤ 35	Prostorni metar	L100 ≤ 100 (±5 cm)	
CE_008	CE_ML_A1_M20_PRM	Meki lišćari	A1	M20 ≤ 20	Prostorni metar	L100 ≤ 100 (±5 cm)	
CE_009	CE_ML_A1_M25_PRM	Meki lišćari	A1	M25 ≤ 25	Prostorni metar	L100 ≤ 100 (±5 cm)	
CE_010	CE_ML_A2_M20_PRM	Meki lišćari	A2	M20 ≤ 20	Prostorni metar	L100 ≤ 100 (±5 cm)	
CE_011	CE_ML_A2_M25_PRM	Meki lišćari	A2	M25 ≤ 25	Prostorni metar	L100 ≤ 100 (±5 cm)	
CE_012	CE_ML_B_M20_PRM	Meki lišćari	B	M20 ≤ 20	Prostorni metar	L100 ≤ 100 (±5 cm)	
CE_013	CE_ML_B_M25_PRM	Meki lišćari	B	M25 ≤ 25	Prostorni metar	L100 ≤ 100 (±5 cm)	
CE_014	CE_ML_B_M35_PRM	Meki lišćari	B	M35 ≤ 35	Prostorni metar	L100 ≤ 100 (±5 cm)	
CE_015	CE_CT_A1_M20_PRM	Četinari	A1	M20 ≤ 20	Prostorni metar	L100 ≤ 100 (±5 cm)	
CE_016	CE_CT_A1_M25_PRM	Četinari	A1	M25 ≤ 25	Prostorni metar	L100 ≤ 100 (±5 cm)	
CE_017	CE_CT_A2_M20_PRM	Četinari	A2	M20 ≤ 20	Prostorni metar	L100 ≤ 100 (±5 cm)	

CE_018	CE_CT_A2_M25_PRM	Četinari	A2	M25 ≤ 25	Prostorni metar	L100 ≤ 100 (±5 cm)
CE_019	CE_CT_B_M20_PRM	Četinari	B	M20 ≤ 20	Prostorni metar	L100 ≤ 100 (±5 cm)
CE_020	CE_CT_B_M25_PRM	Četinari	B	M25 ≤ 25	Prostorni metar	L100 ≤ 100 (±5 cm)
CE_021	CE_CT_B_M35_PRM	Četinari	B	M35 ≤ 35	Prostorni metar	L100 ≤ 100 (±5 cm)
CE_022	CE_ME_A1_M20_PRM	Mešavina drvnih vrsta	A1	M20 ≤ 20	Prostorni metar	L100 ≤ 100 (±5 cm)
CE_023	CE_ME_A1_M25_PRM	Mešavina drvnih vrsta	A1	M25 ≤ 25	Prostorni metar	L100 ≤ 100 (±5 cm)
CE_024	CE_ME_A2_M20_PRM	Mešavina drvnih vrsta	A2	M20 ≤ 20	Prostorni metar	L100 ≤ 100 (±5 cm)
CE_025	CE_ME_A2_M25_PRM	Mešavina drvnih vrsta	A2	M25 ≤ 25	Prostorni metar	L100 ≤ 100 (±5 cm)
CE_026	CE_ME_B_M20_PRM	Mešavina drvnih vrsta	B	M20 ≤ 20	Prostorni metar	L100 ≤ 100 (±5 cm)
CE_027	CE_ME_B_M25_PRM	Mešavina drvnih vrsta	B	M25 ≤ 25	Prostorni metar	L100 ≤ 100 (±5 cm)
CE_028	CE_ME_B_M35_PRM	Mešavina drvnih vrsta	B	M35 ≤ 35	Prostorni metar	L100 ≤ 100 (±5 cm)

Cepanice predstavljaju komade ogrevnog drveta dužine 1 m koji su sa oba kraja prerazani testerom. Proizvedene su metodom cepanja oblog drveta prečnika najmanje 15 cm.

Napomena: U specijalnim slučajevima kao što je unakrsno slaganje cepanica ili kada je drvo veoma zakrivljeno, ekvivalentna neto količina cepanica može da se iskaže kao prostorni metar kubni čija visina može da se poveća za najviše 20%.

5.3 Trgovački kod za ogrevno drvo metarsko u obliku oblica

GENERIC CODE	OB (OGREVNO DRVO METARSKO-OBLICE)

Tip proizvoda	Trgovački naziv (kod)	Vrsta drveta	Klasa kvaliteta	Vlaga u primljenom stanju (%)	Jedinica mere	Dužina u cm	Izgled
OB_001	OB_TL_A1_M20_PRM	Tvrdi lišćari	A1	M20 ≤ 20	Prostorni metar	L100 ≤ 100 (±5 cm)	
OB_002	OB_TL_A1_M25_PRM	Tvrdi lišćari	A1	M25 ≤ 25	Prostorni metar	L100 ≤ 100 (±5 cm)	
OB_003	OB_TL_A2_M20_PRM	Tvrdi lišćari	A2	M20 ≤ 20	Prostorni metar	L100 ≤ 100 (±5 cm)	
OB_004	OB_TL_A2_M25_PRM	Tvrdi lišćari	A2	M25 ≤ 25	Prostorni metar	L100 ≤ 100 (±5 cm)	
OB_005	OB_TL_B_M20_PRM	Tvrdi lišćari	B	M20 ≤ 20	Prostorni metar	L100 ≤ 100 (±5 cm)	
OB_006	OB_TL_B_M25_PRM	Tvrdi lišćari	B	M25 ≤ 25	Prostorni metar	L100 ≤ 100 (±5 cm)	
OB_007	OB_TL_B_M35_PRM	Tvrdi lišćari	B	M35 ≤ 35	Prostorni metar	L100 ≤ 100 (±5 cm)	
OB_008	OB_ML_A1_M20_PRM	Meki lišćari	A1	M20 ≤ 20	Prostorni metar	L100 ≤ 100 (±5 cm)	
OB_009	OB_ML_A1_M25_PRM	Meki lišćari	A1	M25 ≤ 25	Prostorni metar	L100 ≤ 100 (±5 cm)	
OB_010	OB_ML_A2_M20_PRM	Meki lišćari	A2	M20 ≤ 20	Prostorni metar	L100 ≤ 100 (±5 cm)	
OB_011	OB_ML_A2_M25_PRM	Meki lišćari	A2	M25 ≤ 25	Prostorni metar	L100 ≤ 100 (±5 cm)	
OB_012	OB_ML_B_M20_PRM	Meki lišćari	B	M20 ≤ 20	Prostorni metar	L100 ≤ 100 (±5 cm)	
OB_013	OB_ML_B_M25_PRM	Meki lišćari	B	M25 ≤ 25	Prostorni metar	L100 ≤ 100 (±5 cm)	
OB_014	OB_ML_B_M35_PRM	Meki lišćari	B	M35 ≤ 35	Prostorni metar	L100 ≤ 100 (±5 cm)	
OB_015	OB_CT_A1_M20_PRM	Četinari	A1	M20 ≤ 20	Prostorni metar	L100 ≤ 100 (±5 cm)	
OB_016	OB_CT_A1_M25_PRM	Četinari	A1	M25 ≤ 25	Prostorni metar	L100 ≤ 100 (±5 cm)	
OB_017	OB_CT_A2_M20_PRM	Četinari	A2	M20 ≤ 20	Prostorni metar	L100 ≤ 100 (±5 cm)	

OB_018	OB_CT_A2_M25_PRM	Četinari	A2	M25 ≤ 25	Prostorni metar	L100 ≤ 100 (±5 cm)
OB_019	OB_CT_B_M20_PRM	Četinari	B	M20 ≤ 20	Prostorni metar	L100 ≤ 100 (±5 cm)
OB_020	OB_CT_B_M25_PRM	Četinari	B	M25 ≤ 25	Prostorni metar	L100 ≤ 100 (±5 cm)
OB_021	OB_CT_B_M35_PRM	Četinari	B	M35 ≤ 35	Prostorni metar	L100 ≤ 100 (±5 cm)
OB_022	OB_ME_A1_M20_PRM	Mešavina drvnih vrsta	A1	M20 ≤ 20	Prostorni metar	L100 ≤ 100 (±5 cm)
OB_023	OB_ME_A1_M25_PRM	Mešavina drvnih vrsta	A1	M25 ≤ 25	Prostorni metar	L100 ≤ 100 (±5 cm)
OB_024	OB_ME_A2_M20_PRM	Mešavina drvnih vrsta	A2	M20 ≤ 20	Prostorni metar	L100 ≤ 100 (±5 cm)
OB_025	OB_ME_A2_M25_PRM	Mešavina drvnih vrsta	A2	M25 ≤ 25	Prostorni metar	L100 ≤ 100 (±5 cm)
OB_026	OB_ME_B_M20_PRM	Mešavina drvnih vrsta	B	M20 ≤ 20	Prostorni metar	L100 ≤ 100 (±5 cm)
OB_027	OB_ME_B_M25_PRM	Mešavina drvnih vrsta	B	M25 ≤ 25	Prostorni metar	L100 ≤ 100 (±5 cm)
OB_028	OB_ME_B_M35_PRM	Mešavina drvnih vrsta	B	M35 ≤ 35	Prostorni metar	L100 ≤ 100 (±5 cm)

Oblice predstavljaju komade ogrevnog drveta dužine 1 m sa prečnikom od 7-25 cm. Proizvedene su od oblog drveta rezanjem testerom.

Napomena: U specijalnim slučajevima kao sto je unakrsno slaganje oblica ili kada je drvo veoma zakrivljeno, ekvivalentna neto količina oblica može da se iskaže kao prostorni metar kubni čija visina može da se poveća za najviše 20%.

5.4 Trgovački kod za ogrevno drvo cepano

GENERIC CODE	CD (OGREVNO DRVO CEPANO)

Tip proizvoda	Trgovački naziv (kod)	Vrsta drveta	Klasa kvaliteta	Vlaga u primljenom stanju (%)	Dužina u cm	Jedinica mere	Izgled
CD_001	CD_TL_A1_M20_L20-40_PRM	Tvrdi lišćari	A1	M20 ≤ 20	L20-40 (20, 25, 30, 33, 40) (±2 cm)	Prostorni metar	
CD_002	CD_TL_A1_M20_L50_PRM	Tvrdi lišćari	A1	M20 ≤ 20	L50 50 (±4 cm)	Prostorni metar	
CD_003	CD_TL_A1_M25_L20-40_PRM	Tvrdi lišćari	A1	M25 ≤ 25	L20-40 20, 25, 30, 33, 40) (±2 cm)	Prostorni metar	
CD_004	CD_TL_A1_M25_L50_PRM	Tvrdi lišćari	A1	M25 ≤ 25	L50 50 (±4 cm)	Prostorni metar	
CD_005	CD_TL_A2_M20_L20-40_PRM	Tvrdi lišćari	A2	M20 ≤ 20	L20-40 (20, 25, 30, 33, 40) (±2 cm)	Prostorni metar	
CD_006	CD_TL_A2_M20_L50_PRM	Tvrdi lišćari	A2	M20 ≤ 20	L50 50 (±4 cm)	Prostorni metar	
CD_007	CD_TL_A2_M25_L20-40_PRM	Tvrdi lišćari	A2	M25 ≤ 25	L20-40 (20, 25, 30, 33, 40) (±2 cm)	Prostorni metar	
CD_008	CD_TL_A2_M25_L50_PRM	Tvrdi lišćari	A2	M25 ≤ 25	L50 50 (±4 cm)	Prostorni metar	
CD_009	CD_TL_B_M20_L30-40_PRM	Tvrdi lišćari	B	M20 ≤ 20	L30-40 (30, 33, 40) (±2 cm)	Prostorni metar	
CD_010	CD_TL_B_M20_L50_PRM	Tvrdi lišćari	B	M20 ≤ 20	L50 50 (±4 cm)	Prostorni metar	
CD_011	CD_TL_B_M25_L30-40_PRM	Tvrdi lišćari	B	M25 ≤ 25	L30-40 (30, 33, 40) (±2 cm)	Prostorni metar	
CD_012	CD_TL_B_M25_L50_PRM	Tvrdi lišćari	B	M25 ≤ 25	L50 50 (±4 cm)	Prostorni metar	
CD_013	CD_TL_B_M35_L30-40_PRM	Tvrdi lišćari	B	M35 ≤ 35	L30-40 (30, 33, 40) (±2 cm)	Prostorni metar	
CD_014	CD_TL_B_M35_L50_PRM	Tvrdi Lišćari	B	M35 ≤ 35	L50 50 (±4 cm)	Prostorni metar	
CD_015	CD_ML_A1_M20_L20-	Meki lišćari	A1	M20 ≤ 20	L20-40 (20, 25, 30, 33, 40)	Prostorni metar	

	40_PRM				(±2 cm)	
CD_016	CD_ML_A1_M20_L50_PRM	Meki lišćari	A1	M20 ≤ 20	L50 50 (±4 cm)	Prostorni metar
CD_017	CD_ML_A1_M25_L20-40_PRM	Meki lišćari	A1	M25 ≤ 25	L20-40 (20, 25, 30, 33, 40) (±2 cm)	Prostorni metar
CD_018	CD_ML_A1_M25_L50_PRM	Meki lišćari	A1	M25 ≤ 25	L50 50 (±4 cm)	Prostorni metar
CD_019	CD_ML_A2_M20_L20-40_PRM	Meki lišćari	A2	M20 ≤ 20	L20-40 (20, 25, 30, 33, 40) (±2 cm)	Prostorni metar
CD_020	CD_ML_A2_M20_L50_PRM	Meki lišćari	A2	M20 ≤ 20	L50 50 (±4 cm)	Prostorni metar
CD_021	CD_ML_A2_M25_L20-40_PRM	Meki lišćari	A2	M25 ≤ 25	L20-40 (20, 25, 30, 33, 40) (±2 cm)	Prostorni metar
CD_022	CD_ML_A2_M25_L50_PRM	Meki lišćari	A2	M25 ≤ 25	L50 50 (±4 cm)	Prostorni metar
CD_023	CD_ML_B_M20_L30-40_PRM	Meki lišćari	B	M20 ≤ 20	L30-40 (30, 33, 40) (±2 cm)	Prostorni metar
CD_024	CD_ML_B_M20_L50_PRM	Meki lišćari	B	M20 ≤ 20	L50 50 (±4 cm)	Prostorni metar
CD_025	CD_ML_B_M25_L30-40_PRM	Meki lišćari	B	M25 ≤ 25	L30-40 (30, 33, 40) (±2 cm)	Prostorni metar
CD_026	CD_ML_B_M25_L50_PRM	Meki lišćari	B	M25 ≤ 25	L50 50 (±4 cm)	Prostorni metar
CD_027	CD_ML_B_M35_L30-40_PRM	Meki lišćari	B	M35 ≤ 35	L30-40 (30, 33, 40) (±2 cm)	Prostorni metar
CD_028	CD_ML_B_M35_L50_PRM	Meki lišćari	B	M35 ≤ 35	L50 50 (±4 cm)	Prostorni metar
CD_029	CD_CT_A1_M20_L20-40_PRM	Četinari	A1	M20 ≤ 20	L20-40 (20, 25, 30, 33, 40) (±2 cm)	Prostorni metar
CD_030	CD_CT_A1_M20_L50_PRM	Četinari	A1	M20 ≤ 20	L50 50 (±4 cm)	Prostorni metar
CD_031	CD_CT_A1_M25_L20-40_PRM	Četinari	A1	M25 ≤ 25	L20-40 (20, 25, 30, 33, 40) (±2 cm)	Prostorni metar
CD_032	CD_CT_A1_M25_L50_PRM	Četinari	A1	M25 ≤ 25	L50 50 (±4 cm)	Prostorni metar

CD_033	CD_CT_A2_M20_L20-40_PRM	Četinari	A2	M20 ≤ 20	L20-40 (20, 25, 30, 33, 40) (±2 cm)	Prostorni metar
CD_034	CD_CT_A2_M20_L50_PRM	Četinari	A2	M20 ≤ 20	L50 50 (±4 cm)	Prostorni metar
CD_035	CD_CT_A2_M25_L20-40_PRM	Četinari	A2	M25 ≤ 25	L20-40 (20, 25, 30, 33, 40) (±2 cm)	Prostorni metar
CD_036	CD_CT_A2_M25_L50_PRM	Četinari	A2	M25 ≤ 25	L50 50 (±4 cm)	Prostorni metar
CD_037	CD_CT_B_M20_L30-40_PRM	Četinari	B	M20 ≤ 20	L30-40 (30, 33, 40) (±2 cm)	Prostorni metar
CD_038	CD_CT_B_M20_L50_PRM	Četinari	B	M20 ≤ 20	L50 50 (±4 cm)	Prostorni metar
CD_039	CD_CT_B_M25_L30-40_PRM	Četinari	B	M25 ≤ 25	L30-40 (30, 33, 40) (±2 cm)	Prostorni metar
CD_040	CD_CT_B_M25_L50_PRM	Četinari	B	M25 ≤ 25	L50 50 (±4 cm)	Prostorni metar
CD_041	CD_CT_B_M35_L30-40_PRM	Četinari	B	M35 ≤ 35	L30-40 (30, 33, 40) (±2 cm)	Prostorni metar
CD_042	CD_CT_B_M35_L50_PRM	Četinari	B	M35 ≤ 35	L50 50 (±4 cm)	Prostorni metar
CD_043	CD_ME_A1_M20_L20-40_PRM	Mešavina drvnih vrsta	A1	M20 ≤ 20	L20-40 (20, 25, 30, 33, 40) (±2 cm)	Prostorni metar
CD_044	CD_ME_A1_M20_L50_PRM	Mešavina drvnih vrsta	A1	M20 ≤ 20	L50 50 (±4 cm)	Prostorni metar
CD_045	CD_ME_A1_M25_L20-40_PRM	Mešavina drvnih vrsta	A1	M25 ≤ 25	L20-40 (20, 25, 30, 33, 40) (±2 cm)	Prostorni metar
CD_046	CD_ME_A1_M25_L50_PRM	Mešavina drvnih vrsta	A1	M25 ≤ 25	L50 50 (±4 cm)	Prostorni metar
CD_047	CD_ME_A2_M20_L20-40_PRM	Mešavina drvnih vrsta	A2	M20 ≤ 20	L20-40 (20, 25, 30, 33, 40) (±2 cm)	Prostorni metar
CD_048	CD_ME_A2_M20_L50_PRM	Mešavina drvnih vrsta	A2	M20 ≤ 20	L50 50 (±4 cm)	Prostorni metar
CD_049	CD_ME_A2_M25_L20-40_PRM	Mešavina drvnih vrsta	A2	M25 ≤ 25	L20-40 (20, 25, 30, 33, 40) (±2 cm)	Prostorni metar
CD_050	CD_ME_A2_M25_L50_PRM	Mešavina drvnih vrsta	A2	M25 ≤ 25	L50 50 (±4 cm)	Prostorni metar
CD_051	CD_ME_B_M20_L30-40_PRM	Mešavina drvnih vrsta	B	M20 ≤ 20	L30-40 (30, 33, 40) (±2 cm)	Prostorni metar

CD_052	CD_ME_B_M20_L50_PRM	Mešavina drvnih vrsta	B	M20 ≤ 20	L50 50 (±4 cm)	Prostorni metar
CD_053	CD_ME_B_M25_L30-40_PRM	Mešavina drvnih vrsta	B	M25 ≤ 25	L30-40 (30, 33, 40) (±2 cm)	Prostorni metar
CD_054	CD_ME_B_M25_L50_PRM	Mešavina drvnih vrsta	B	M25 ≤ 25	L50 50 (±4 cm)	Prostorni metar
CD_055	CD_ME_B_M35_L30-40_PRM	Mešavina drvnih vrsta	B	M35 ≤ 35	L30-40 (30, 33, 40) (±2 cm)	Prostorni metar
CD_056	CD_ME_B_M35_L50_PRM	Mešavina drvnih vrsta	B	M35 ≤ 35	L50 50 (±4 cm)	Prostorni metar

Ogrevno drvo cepano predstavlja tradicionalnu formu drvnog goriva dužine od 20-50 cm, dobijeno kraćenjem i cepanjem oblovine, cepanica (1 m) ili oblica (1 m).

5.5 Trgovački kod za drvnu sečku

GENERIC CODE	DS (DRVNA SEČKA)

Tip proizvoda	Trgovački naziv (kod)	Vrsta drveta	Klasa kvaliteta	Veličina čestica glavne frakcije (min 60% ukupne zapremine)	Vlaga u primljenom stanju (%)	Jedinica mere	Izgled
DS_001	DS_TL_A1_M10_P16S_NM	Tvrdi lišćari	A1	P16S	M10 ≤ 10	Nasipni metar kubni	
DS_002	DS_TL_A1_M10_P31S_NM	Tvrdi lišćari		P31S	M10 ≤ 10	Nasipni metar kubni	
DS_003	DS_TL_A1_M10_P45S_NM	Tvrdi lišćari		P45S	M10 ≤ 10	Nasipni metar kubni	
DS_004	DS_TL_A1_M25_P16S_NM	Tvrdi lišćari		P16S	M25 ≤ 25	Nasipni metar kubni	
DS_005	DS_TL_A1_M25_P31S_NM	Tvrdi lišćari		P31S	M25 ≤ 25	Nasipni metar kubni	
DS_006	DS_TL_A1_M25_P45S_NM	Tvrdi lišćari		P45S	M25 ≤ 25	Nasipni metar kubni	
DS_007	DS_TL_A2_M35_P16S_NM	Tvrdi lišćari	A2	P16S	M35 ≤ 35	Nasipni metar kubni	
DS_008	DS_TL_A2_M35_P31S_NM	Tvrdi lišćari		P31S	M35 ≤ 35	Nasipni metar kubni	
DS_009	DS_TL_A2_M35_P45S_NM	Tvrdi lišćari		P45S	M35 ≤ 35	Nasipni metar kubni	
DS_010	DS_TL_B1_P16S_NM	Tvrdi lišćari	B1	P16S	Navodi se najveća vrednost	Nasipni metar kubni	
DS_011	DS_TL_B1_P31S_NM	Tvrdi lišćari		P31S		Nasipni metar kubni	
DS_012	DS_TL_B1_P45S_NM	Tvrdi lišćari		P45S		Nasipni metar kubni	
DS_013	DS_TL_B2_P16S_NM	Tvrdi lišćari	B2	P16S	Navodi se najveća vrednost	Nasipni metar kubni	
DS_014	DS_TL_B2_P31S_NM	Tvrdi lišćari		P31S		Nasipni metar kubni	
DS_015	DS_TL_B2_P45S_NM	Tvrdi lišćari		P45S		Nasipni metar kubni	
DS_016	DS_ML_A1_M10_P16S_NM	Meki lišćari	A1	P16S	M10 ≤ 10	Nasipni metar kubni	
DS_017	DS_ML_A1_M10_P31S_NM	Meki lišćari		P31S	M10 ≤ 10	Nasipni metar kubni	

DS_018	DS_ML_A1_M10_P45S_NM	Meki lišćari		P45S	M10 ≤ 10	Nasipni metar kubni	
DS_019	DS_ML_A1_M25_P16S_NM	Meki lišćari		P16S	M25 ≤ 25	Nasipni metar kubni	
DS_020	DS_ML_A1_M25_P31S_NM	Meki lišćari		P31S	M25 ≤ 25	Nasipni metar kubni	
DS_021	DS_ML_A1_M25_P45S_NM	Meki lišćari		P45S	M25 ≤ 25	Nasipni metar kubni	
DS_022	DS_ML_A2_M35_P16S_NM	Meki lišćari		P16S	M35 ≤ 35	Nasipni metar kubni	
DS_023	DS_ML_A2_M35_P31S_NM	Meki lišćari	A2	P31S	M35 ≤ 35	Nasipni metar kubni	
DS_024	DS_ML_A2_M35_P45S_NM	Meki lišćari		P45S	M35 ≤ 35	Nasipni metar kubni	
DS_025	DS_ML_B1_P16S_NM	Meki lišćari		P16S	Navodi se najveća vrednost	Nasipni metar kubni	
DS_026	DS_ML_B1_P31S_NM	Meki lišćari	B1	P31S		Nasipni metar kubni	
DS_027	DS_ML_B1_P45S_NM	Meki lišćari		P45S		Nasipni metar kubni	
DS_028	DS_ML_B2_P16S_NM	Meki lišćari		P16S	Navodi se najveća vrednost	Nasipni metar kubni	
DS_029	DS_ML_B2_P31S_NM	Meki lišćari	B2	P31S		Nasipni metar kubni	
DS_030	DS_ML_B2_P45S_NM	Meki lišćari		P45S		Nasipni metar kubni	
DS_031	DS_CT_A1_M10_P16S_NM	Četinari		P16S	M10 ≤ 10	Nasipni metar kubni	
DS_032	DS_CT_A1_M10_P31S_NM	Četinari		P31S	M10 ≤ 10	Nasipni metar kubni	
DS_033	DS_CT_A1_M10_P45S_NM	Četinari		P45S	M10 ≤ 10	Nasipni metar kubni	
DS_034	DS_CT_A1_M25_P16S_NM	Četinari	A1	P16S	M25 ≤ 25	Nasipni metar kubni	
DS_035	DS_CT_A1_M25_P31S_NM	Četinari		P31S	M25 ≤ 25	Nasipni metar kubni	
DS_036	DS_CT_A1_M25_P45S_NM	Četinari		P45S	M25 ≤ 25	Nasipni metar kubni	
DS_037	DS_CT_A2_M35_P16S_NM	Četinari		P16S	M35 ≤ 35	Nasipni metar kubni	
DS_038	DS_CT_A2_M35_P31S_NM	Četinari	A2	P31S	M35 ≤ 35	Nasipni metar kubni	
DS_039	DS_CT_A2_M35_P45S_NM	Četinari		P45S	M35 ≤ 35	Nasipni metar kubni	
DS_040	DS_CT_B1_P16S_NM	Četinari	B1	P16S	Navodi se	Nasipni metar kubni	

DS_041	DS_CT_B1_P31S_NM	Četinari		P31S	najveća vrednost	Nasipni metar kubni
DS_042	DS_CT_B1_P45S_NM	Četinari		P45S		Nasipni metar kubni
DS_043	DS_CT_B2_P16S_NM	Četinari	B2	P16S	Navodi se najveća vrednost	Nasipni metar kubni
DS_044	DS_CT_B2_P31S_NM	Četinari		P31S		Nasipni metar kubni
DS_045	DS_CT_B2_P45S_NM	Četinari		P45S		Nasipni metar kubni
DS_046	DS_ME_A1_M10_P16S_NM	Mešavina drvnih vrsta	A1	P16S	M10 ≤ 10	Nasipni metar kubni
DS_047	DS_ME_A1_M10_P31S_NM	Mešavina drvnih vrsta		P31S	M10 ≤ 10	Nasipni metar kubni
DS_048	DS_ME_A1_M10_P45S_NM	Mešavina drvnih vrsta		P45S	M10 ≤ 10	Nasipni metar kubni
DS_049	DS_ME_A1_M25_P16S_NM	Mešavina drvnih vrsta		P16S	M25 ≤ 25	Nasipni metar kubni
DS_050	DS_ME_A1_M25_P31S_NM	Mešavina drvnih vrsta		P31S	M25 ≤ 25	Nasipni metar kubni
DS_051	DS_ME_A1_M25_P45S_NM	Mešavina drvnih vrsta		P45S	M25 ≤ 25	Nasipni metar kubni
DS_052	DS_ME_A2_M35_P16S_NM	Mešavina drvnih vrsta	A2	P16S	M35 ≤ 35	Nasipni metar kubni
DS_053	DS_ME_A2_M35_P31S_NM	Mešavina drvnih vrsta		P31S	M35 ≤ 35	Nasipni metar kubni
DS_054	DS_ME_A2_M35_P45S_NM	Mešavina drvnih vrsta		P45S	M35 ≤ 35	Nasipni metar kubni
DS_055	DS_ME_B1_P16S_NM	Mešavina drvnih vrsta	B1	P16S	Navodi se najveća vrednost	Nasipni metar kubni
DS_056	DS_ME_B1_P31S_NM	Mešavina drvnih vrsta		P31S		Nasipni metar kubni

DS_057	DS_ME_B1_P45S_NM	Mešavina drvnih vrsta		P45S		Nasipni metar kubni	
DS_058	DS_ME_B2_P16S_NM	Mešavina drvnih vrsta	B2	P16S	Navodi se najveća vrednost	Nasipni metar kubni	
DS_059	DS_ME_B2_P31S_NM	Mešavina drvnih vrsta		P31S		Nasipni metar kubni	
DS_060	DS_ME_B2_P45S_NM	Mešavina drvnih vrsta		P45S		Nasipni metar kubni	

Drvna sečka predstavlja usitnjeno drvno gorivo koje se sastoji od tri frakcije: glavne (min 60% u ukupnoj zapremini), sitne i krupne frakcije. Učešće pojedinih frakcija kao i dužine komada definisani su za svaki od tri razreda veličine komada: P16S, P31S i P45S.

5.6 Trgovački kod za drvne pelete za komercijalnu i upotrebu u stambenim objektima

GENERIC CODE	DPK (DRVNI PELETI ZA KOMERCIJALNU UPOTREBU)

Tip proizvoda	Trgovački naziv (kod)	Vrsta drveta	Klasa kvaliteta	Prečnik, mm	Vlaga u primljenom stanju (%)	Jedinica mere	Izgled
DPK_001	DPK_TL_A1_D06_M10_KG	Tvrdi lišćari	A1	D06 6 ± 1	M10 ≤ 10	kilogram	
DPK_002	DPK_TL_A1_D08_M10_KG	Tvrdi lišćari		D08 8 ± 1	M10 ≤ 10	kilogram	
DPK_003	DPK_TL_A2_D06_M10_KG	Tvrdi lišćari	A2	D06 6 ± 1	M10 ≤ 10	kilogram	
DPK_004	DPK_TL_A2_D08_M10_KG	Tvrdi lišćari		D08 8 ± 1	M10 ≤ 10	kilogram	
DPK_005	DPK_TL_B_D06_M10_KG	Tvrdi lišćari	B	D06 6 ± 1	M10 ≤ 10	kilogram	
DPK_006	DPK_TL_B_D08_M10_KG	Tvrdi lišćari		D08 8 ± 1	M10 ≤ 10	kilogram	
DPK_007	DPK_ML_A1_D06_M10_KG	Meki lišćari	A1	D06 6 ± 1	M10 ≤ 10	kilogram	
DPK_008	DPK_ML_A1_D08_M10_KG	Meki lišćari		D08 8 ± 1	M10 ≤ 10	kilogram	
DPK_009	DPK_ML_A2_D06_M10_KG	Meki lišćari	A2	D06 6 ± 1	M10 ≤ 10	kilogram	
DPK_010	DPK_ML_A2_D08_M10_KG	Meki lišćari		D08 8 ± 1	M10 ≤ 10	kilogram	
DPK_011	DPK_ML_B_D06_M10_KG	Meki lišćari	B	D06 6 ± 1	M10 ≤ 10	kilogram	
DPK_012	DPK_ML_B_D08_M10_KG	Meki lišćari		D08 8 ± 1	M10 ≤ 10	kilogram	
DPK_013	DPK_CT_A1_D06_M10_KG	Četinari	A1	D06 6 ± 1	M10 ≤ 10	kilogram	
DPK_014	DPK_CT_A1_D08_M10_KG	Četinari		D08 8 ± 1	M10 ≤ 10	kilogram	
DPK_015	DPK_CT_A2_D06_M10_KG	Četinari	A2	D06 6 ± 1	M10 ≤ 10	kilogram	
DPK_016	DPK_CT_A2_D08_M10_KG	Četinari		D08 8 ± 1	M10 ≤ 10	kilogram	
DPK_017	DPK_CT_B_D06_M10_KG	Četinari	B	D06 6 ± 1	M10 ≤ 10	kilogram	

DPK_018	DPK_CT_B_D08_M10_KG	Četinari		D08 8 ± 1	M10 ≤ 10	kilogram
DPK_019	DPK_ME_A1_D06_M10_KG	Mešavina drvnih vrsta	A1	D06 6 ± 1	M10 ≤ 10	kilogram
DPK_020	DPK_ME_A1_D08_M10_KG	Mešavina drvnih vrsta		D08 8 ± 1	M10 ≤ 10	kilogram
DPK_021	DPK_ME_A2_D06_M10_KG	Mešavina drvnih vrsta	A2	D06 6 ± 1	M10 ≤ 10	kilogram
DPK_022	DPK_ME_A2_D08_M10_KG	Mešavina drvnih vrsta		D08 8 ± 1	M10 ≤ 10	kilogram
DPK_023	DPK_ME_B_D06_M10_KG	Mešavina drvnih vrsta	B	D06 6 ± 1	M10 ≤ 10	kilogram
DPK_024	DPK_ME_B_D08_M10_KG	Mešavina drvnih vrsta		D08 8 ± 1	M10 ≤ 10	kilogram

Drvni peleti predstavljaju prefinjene homogenizovane forme goriva proizvedene od drvnog ostatka koji nastaje u procesima prerade drveta ili iz ostalih oblika drvne biomase njihovim usitnjavanjem do nivoa drvnog brašna, a zatim njegovim sabijanjem u posebnim presama.

5.7 Trgovački kod za drvne pelete za industrijsku upotrebu

GENERIC CODE	DPI (DRVNEPELETE ZA INDUSTRIJSKU UPOTREBU)

Tip proizvoda	Trgovački naziv (kod)	Vrsta drveta	Klasa kvaliteta	Prečnik, mm	Vlaga u primljenom stanju (%)	Jedinica mere	Izgled
DPI_001	DPI_TL_I1_D06_M10_KG	Tvrdi lišćari	I1	D06 6 ± 1	M10 ≤ 10	kilogram	
DPI_002	DPI_TL_I1_D08_M10_KG	Tvrdi lišćari		D08 8 ± 1	M10 ≤ 10	kilogram	
DPI_003	DPI_TL_I2_D06_M10_KG	Tvrdi lišćari	I2	D06 6 ± 1	M10 ≤ 10	kilogram	
DPI_004	DPI_TL_I2_D08_M10_KG	Tvrdi lišćari		D08 8 ± 1	M10 ≤ 10	kilogram	
DPI_005	DPI_TL_I2_D10_M10_KG	Tvrdi lišćari		D10 10 ± 1	M10 ≤ 10	kilogram	
DPI_006	DPI_TL_I3_D06_M10_KG	Tvrdi lišćari	I3	D06 6 ± 1	M10 ≤ 10	kilogram	
DPI_007	DPI_TL_I3_D08_M10_KG	Tvrdi lišćari		D08 8 ± 1	M10 ≤ 10	kilogram	
DPI_008	DPI_TL_I3_D10_M10_KG	Tvrdi lišćari		D10 10 ± 1	M10 ≤ 10	kilogram	
DPI_009	DPI_TL_I3_D12_M10_KG	Tvrdi lišćari		D12 12 ± 1	M10 ≤ 10	kilogram	
DPI_010	DPI_ML_I1_D06_M10_KG	Meki lišćari	I1	D06 6 ± 1	M10 ≤ 10	kilogram	
DPI_011	DPI_ML_I1_D08_M10_KG	Meki lišćari		D08 8 ± 1	M10 ≤ 10	kilogram	
DPI_012	DPI_ML_I2_D06_M10_KG	Meki lišćari	I2	D06 6 ± 1	M10 ≤ 10	kilogram	
DPI_013	DPI_ML_I2_D08_M10_KG	Meki lišćari		D08 8 ± 1	M10 ≤ 10	kilogram	
DPI_014	DPI_ML_I2_D10_M10_KG	Meki lišćari		D10 10 ± 1	M10 ≤ 10	kilogram	
DPI_015	DPI_ML_I3_D06_M10_KG	Meki lišćari	I3	D06 6 ± 1	M10 ≤ 10	kilogram	
DPI_016	DPI_ML_I3_D08_M10_KG	Meki lišćari		D08 8 ± 1	M10 ≤ 10	kilogram	
DPI_017	DPI_ML_I3_D10_M10_KG	Meki lišćari		D10 10 ± 1	M10 ≤ 10	kilogram	

DPI_018	DPI_ML_I3_D12_M10_KG	Meki lišćari		D12 12 ± 1	M10 ≤ 10	kilogram
DPI_019	DPI_CT_I1_D06_M10_KG	Četinari	I1	D06 6 ± 1	M10 ≤ 10	kilogram
DPI_020	DPI_CT_I1_D08_M10_KG	Četinari		D08 8 ± 1	M10 ≤ 10	kilogram
DPI_021	DPI_CT_I2_D06_M10_KG	Četinari	I2	D06 6 ± 1	M10 ≤ 10	kilogram
DPI_022	DPI_CT_I2_D08_M10_KG	Četinari		D08 8 ± 1	M10 ≤ 10	kilogram
DPI_023	DPI_CT_I2_D10_M10_KG	Četinari		D10 10 ± 1	M10 ≤ 10	kilogram
DPI_024	DPI_CT_I3_D06_M10_KG	Četinari	I3	D06 6 ± 1	M10 ≤ 10	kilogram
DPI_025	DPI_CT_I3_D08_M10_KG	Četinari		D08 8 ± 1	M10 ≤ 10	kilogram
DPI_026	DPI_CT_I3_D10_M10_KG	Četinari		D10 10 ± 1	M10 ≤ 10	kilogram
DPI_027	DPI_CT_I3_D12_M10_KG	Četinari		D12 12 ± 1	M10 ≤ 10	kilogram
DPI_028	DPI_ME_I1_D06_M10_KG	Mešavina drvnih vrsta	I1	D06 6 ± 1	M10 ≤ 10	kilogram
DPI_029	DPI_ME_I1_D08_M10_KG	Mešavina drvnih vrsta		D08 8 ± 1	M10 ≤ 10	kilogram
DPI_030	DPI_ME_I2_D06_M10_KG	Mešavina drvnih vrsta	I2	D06 6 ± 1	M10 ≤ 10	kilogram
DPI_031	DPI_ME_I2_D08_M10_KG	Mešavina drvnih vrsta		D08 8 ± 1	M10 ≤ 10	kilogram
DPI_032	DPI_ME_I2_D10_M10_KG	Mešavina drvnih vrsta		D10 10 ± 1	M10 ≤ 10	kilogram
DPI_033	DPI_ME_I3_D06_M10_KG	Mešavina drvnih vrsta	I3	D06 6 ± 1	M10 ≤ 10	kilogram
DPI_034	DPI_ME_I3_D08_M10_KG	Mešavina drvnih vrsta		D08 8 ± 1	M10 ≤ 10	kilogram
DPI_035	DPI_ME_I3_D10_M10_KG	Mešavina drvnih vrsta		D10 10 ± 1	M10 ≤ 10	kilogram
DPI_036	DPI_ME_I3_D12_M10_KG	Mešavina drvnih vrsta		D12 12 ± 1	M10 ≤ 10	kilogram

5.8 Trgovački kod za drvne brikete

GENERIC CODE	DB (DRVNI BRIKETI)

Tip proizvoda	Trgovački naziv (kod)	Vrsta drveta	Klasa kvaliteta	Vlaga u primljenom stanju (%)	Dimenzije u mm	Jedinica mere	Izgled
DB_001	DB_TL_A1_M12_KG	Tvrdi lišćari	A1	M12 ≤ 12	Navode se forma i: 1. prečnik i dužina za cilindrične forme; 2. dužina, širina i visina za ostale forme.	kilogram	
DB_002	DB_TL_A2_M15_KG	Tvrdi lišćari	A2	M15 ≤ 15		kilogram	
DB_003	DB_TL_B_M15_KG	Tvrdi lišćari	B	M15 ≤ 15		kilogram	
DB_004	DB_ML_A1_M12_KG	Meki lišćari	A1	M12 ≤ 12		kilogram	
DB_005	DB_ML_A2_M15_KG	Meki lišćari	A2	M15 ≤ 15		kilogram	
DB_006	DB_ML_B_M15_KG	Meki lišćari	B	M15 ≤ 15		kilogram	
DB_007	DB_CT_A1_M12_KG	Četinari	A1	M12 ≤ 12		kilogram	
DB_008	DB_CT_A2_M15_KG	Četinari	A2	M15 ≤ 15		kilogram	
DB_009	DB_CT_B_M15_KG	Četinari	B	M15 ≤ 15		kilogram	
DB_010	DB_ME_A1_M12_KG	Mešavina drvnih vrsta	A1	M12 ≤ 12		kilogram	
DB_011	DB_ME_A2_M15_KG	Mešavina drvnih vrsta	A2	M15 ≤ 15		kilogram	
DB_012	DB_ME_B_M15_KG	Mešavina drvnih vrsta	B	M15 ≤ 15		kilogram	

Drvni briketi predstavljaju kompaktne forme drvnih goriva koji se dobijaju fizičkim sabijanjem usitnjenog drvnog materijala u odgovarajućim presama (mehaničkim i hidrauličnim).

5.9 Trgovački kod za piljevinu od drveta

GENERIC CODE	PI (PILJEVINA)

Tip proizvoda	Trgovački naziv (kod)	Vrsta drveta	Vlaga	Jedinica mere	Izgled
PI_001	PI_TL_S_KG	Tvrdi lišćari	Sirovo	Kilogram	
PI_002	PI_TL_P_KG	Tvrdi lišćari	Prosušeno	Kilogram	
PI_003	PI_TL_VS_KG	Tvrdi lišćari	Vazdušno suvo	Kilogram	
PI_004	PI_TL_SU_KG	Tvrdi lišćari	Suvo	Kilogram	
PI_005	PI_ML_S_KG	Meki lišćari	Sirovo	Kilogram	
PI_006	PI_ML_P_KG	Meki lišćari	Prosušeno	Kilogram	
PI_007	PI_ML_VS_KG	Meki lišćari	Vazdušno suvo	Kilogram	
PI_008	PI_ML_SU_KG	Meki lišćari	Suvo	Kilogram	
PI_009	PI_CT_S_KG	Četinari	Sirovo	Kilogram	
PI_010	PI_CT_P_KG	Četinari	Prosušeno	Kilogram	
PI_011	PI_CT_VS_KG	Četinari	Vazdušno suvo	Kilogram	
PI_012	PI_CT_SU_KG	Četinari	Suvo	Kilogram	
PI_013	PI_ME_S_KG	Mešavina drvnih vrsta	Sirovo	Kilogram	
PI_014	PI_ME_P_KG	Mešavina drvnih vrsta	Prosušeno	Kilogram	
PI_015	PI_ME_VS_KG	Mešavina drvnih vrsta	Vazdušno suvo	Kilogram	
PI_016	PI_ME_SU_KG	Mešavina drvnih vrsta	Suvo	Kilogram	
PI_017	PI_TL_S_NM	Tvrdi lišćari	Sirovo	Nasipni metar kubni	
PI_018	PI_TL_P_NM	Tvrdi lišćari	Prosušeno	Nasipni metar kubni	

PI_019	PI_TL_VS_NM	Tvrdi lišćari	Vazdušno suvo	Nasipni metar kubni
PI_020	PI_TL_SU_NM	Tvrdi lišćari	Suvo	Nasipni metar kubni
PI_021	PI_ML_S_NM	Meki lišćari	Sirovo	Nasipni metar kubni
PI_022	PI_ML_P_NM	Meki lišćari	Prosušeno	Nasipni metar kubni
PI_023	PI_ML_VS_NM	Meki lišćari	Vazdušno suvo	Nasipni metar kubni
PI_024	PI_ML_SU_NM	Meki lišćari	Suvo	Nasipni metar kubni
PI_025	PI_CT_S_NM	Četinari	Sirovo	Nasipni metar kubni
PI_026	PI_CT_P_NM	Četinari	Prosušeno	Nasipni metar kubni
PI_027	PI_CT_VS_NM	Četinari	Vazdušno suvo	Nasipni metar kubni
PI_028	PI_CT_SU_NM	Četinari	Suvo	Nasipni metar kubni
PI_029	PI_ME_S_NM	Mešavina drvnih vrsta	Sirovo	Nasipni metar kubni
PI_030	PI_ME_P_NM	Mešavina drvnih vrsta	Prosušeno	Nasipni metar kubni
PI_031	PI_ME_VS_NM	Mešavina drvnih vrsta	Vazdušno suvo	Nasipni metar kubni
PI_032	PI_ME_SU_NM	Mešavina drvnih vrsta	Suvo	Nasipni metar kubni

Kod za piljevinu obuhvata i ostale sitne drvne čestice kao što je drvna šuška iz procesa prerade drveta u pogonima.

5.10 Trgovački kod za okorke

GENERIC CODE	OK (OKORCI)

Tip proizvoda	Trgovački naziv (kod)	Vrsta drveta	Vlaga	Dimenzije	Jedinica mere	Izgled
OK_001	OK_TL_S_PM	Tvrdi lišćari	Sirovo		Prostorni metar	
OK_002	OK_ML_S_PM	Meki lišćari	Sirovo		Prostorni metar	
OK_003	OK_CT_S_PM	Četinari	Sirovo		Prostorni metar	
OK_004	OK_ME_S_PM	Mešavina drvnih vrsta	Sirovo		Prostorni metar	
OK_005	OK_TL_P_PM	Tvrdi lišćari	Prosušeno		Prostorni metar	
OK_006	OK_ML_P_PM	Meki lišćari	Prosušeno		Prostorni metar	
OK_007	OK_CT_P_PM	Četinari	Prosušeno		Prostorni metar	
OK_008	OK_ME_P_PM	Mešavina drvnih vrsta	Prosušeno		Prostorni metar	

Okorci predstavljaju drvne ostatke različitog oblika i dimenzija koji nastaju kao sporedni proizvodi u procesu rezanja oblovine.

5.11 Trgovački kod za drvne ostatke od rezanja

GENERIC CODE	DO (DRVNI OSTACI OD REZANJA)

Tip proizvoda	Trgovački naziv (kod)	Vrsta drveta	Vlaga	Jedinica mere
DO_001	DO_TL_S_KG	Tvrdi lišćari	Sirovo	Kilogram
DO_002	DO_TL_P_KG	Tvrdi lišćari	Prosušeno	Kilogram
DO_003	DO_TL_VS_KG	Tvrdi lišćari	Vazdušno suvo	Kilogram
DO_004	DO_TL_SU_KG	Tvrdi lišćari	Suvo	Kilogram
DO_005	DO_ML_S_KG	Meki lišćari	Sirovo	Kilogram
DO_006	DO_ML_P_KG	Meki lišćari	Prosušeno	Kilogram
DO_007	DO_ML_VS_KG	Meki lišćari	Vazdušno suvo	Kilogram
DO_008	DO_ML_SU_KG	Meki lišćari	Suvo	Kilogram
DO_009	DO_CT_S_KG	Četinari	Sirovo	Kilogram
DO_010	DO_CT_P_KG	Četinari	Prosušeno	Kilogram
DO_011	DO_CT_VS_KG	Četinari	Vazdušno suvo	Kilogram
DO_012	DO_CT_SU_KG	Četinari	Suvo	Kilogram
DO_013	DO_ME_S_KG	Mešavina drvnih vrsta	Sirovo	Kilogram
DO_014	DO_ME_P_KG	Mešavina drvnih vrsta	Prosušeno	Kilogram
DO_015	DO_ME_VS_KG	Mešavina drvnih vrsta	Vazdušno suvo	Kilogram
DO_016	DO_ME_SU_KG	Mešavina drvnih vrsta	Suvo	Kilogram
DO_017	DO_TL_S_NM	Tvrdi lišćari	Sirovo	Nasipni metar kubni
DO_018	DO_TL_P_NM	Tvrdi lišćari	Prosušeno	Nasipni metar kubni

Izgled

DO_019	DO_TL_VS_NM	Tvrdi lišćari	Vazdušno suvo	Nasipni metar kubni
DO_020	DO_TL_SU_NM	Tvrdi lišćari	Suvo	Nasipni metar kubni
DO_021	DO_ML_S_NM	Meki lišćari	Sirovo	Nasipni metar kubni
DO_022	DO_ML_P_NM	Meki lišćari	Prosušeno	Nasipni metar kubni
DO_023	DO_ML_VS_NM	Meki lišćari	Vazdušno suvo	Nasipni metar kubni
DO_024	DO_ML_SU_NM	Meki lišćari	Suvo	Nasipni metar kubni
DO_025	DO_CT_S_NM	Četinari	Sirovo	Nasipni metar kubni
DO_026	DO_CT_P_NM	Četinari	Prosušeno	Nasipni metar kubni
DO_027	DO_CT_VS_NM	Četinari	Vazdušno suvo	Nasipni metar kubni
DO_028	DO_CT_SU_NM	Četinari	Suvo	Nasipni metar kubni
DO_029	DO_ME_S_NM	Mešavina drvnih vrsta	Sirovo	Nasipni metar kubni
DO_030	DO_ME_P_NM	Mešavina drvnih vrsta	Prosušeno	Nasipni metar kubni
DO_031	DO_ME_VS_NM	Mešavina drvnih vrsta	Vazdušno suvo	Nasipni metar kubni
DO_032	DO_ME_SU_NM	Mešavina drvnih vrsta	Suvo	Nasipni metar kubni

Kod za **drvne ostatke od rezanja** obuhvata, u najvećoj meri, ostatke od rezanja u procesima mehaničke prerade drveta (okrajci, odrubci, porupci, odsečci, itd.) kao i ostatke prilikom porubljivanja (čeljenja) trupaca.

5.12 Trgovački kod za drveni ugalj

GENERIC CODE	DU (DRVENI UGALJ)

Tip proizvoda	Trgovački naziv (kod)	Vrsta drveta	Vlaga u primljenom stanju (%)	Dimenzije glavne frakcije 16 mm ≤ *P* ≤ 150 mm	Jedinica mere	Izgled
DU_001	DU_M8_P150_KG		M8 ≤ 8	P150	kilogram	
DU_002	DU_M10_P150_KG		M10 ≤ 10	P150	kilogram	

5.13 Trgovački kod za koru od drveta

GENERIC CODE	KO (KORA)

Tip proizvoda	Trgovački naziv (kod)	Vrsta drveta	Vlaga u primljenom stanju (%)	Dimenzije	Jedinica mere	Izgled
KO_001	KO_L_M20_KG	Lišćari	M20 ≤ 20 %	P16, P45, P63, P100, P200	Kilogram	
KO_002	KO_L_M25_KG	Lišćari	M25 ≤ 25 %	P16, P45, P63, P100, P200	Kilogram	
KO_003	KO_L_M30_KG	Lišćari	M30 ≤ 30 %	P16, P45, P63, P100, P200	Kilogram	
KO_004	KO_L_M35_KG	Lišćari	M35 ≤ 35 %	P16, P45, P63, P100, P200	Kilogram	
KO_005	KO_L_M40_KG	Lišćari	M40 ≤ 40 %	P16, P45, P63, P100, P200	Kilogram	
KO_006	KO_L_M45_KG	Lišćari	M45 ≤ 45 %	P16, P45, P63, P100, P200	Kilogram	
KO_007	KO_L_M50_KG	Lišćari	M50 ≤ 50 %	P16, P45, P63, P100, P200	Kilogram	
KO_008	KO_L_M55_KG	Lišćari	M55 ≤ 55 %	P16, P45, P63, P100, P200	Kilogram	
KO_009	KO_L_M60_KG	Lišćari	M60 ≤ 60 %	P16, P45, P63, P100, P200	Kilogram	
KO_010	KO_L_M65_KG	Lišćari	M65 ≤ 65 %	P16, P45, P63, P100, P200	Kilogram	
KO_011	KO_CT_M65+_KG	Lišćari	M65+ > 65 %	P16, P45, P63, P100, P200	Kilogram	
KO_012	KO_CT_M20_KG	Četinari	M20 ≤ 20 %	P16, P45, P63, P100, P200	Kilogram	
KO_013	KO_CT_M25_KG	Četinari	M25 ≤ 25 %	P16, P45, P63, P100, P200	Kilogram	
KO_014	KO_CT_M30_KG	Četinari	M30 ≤ 30 %	P16, P45, P63, P100, P200	Kilogram	
KO_015	KO_CT_M35_KG	Četinari	M35 ≤ 35 %	P16, P45, P63, P100, P200	Kilogram	
KO_016	KO_CT_M40_KG	Četinari	M40 ≤ 40 %	P16, P45, P63, P100, P200	Kilogram	
KO_017	KO_CT_M45_KG	Četinari	M45 ≤ 45 %	P16, P45, P63, P100, P200	Kilogram	

KO_018	KO_CT_M50_KG	Četinari	M50	≤ 50 %	P16, P45, P63, P100, P200	Kilogram
KO_019	KO_CT_M55_KG	Četinari	M55	≤ 55 %	P16, P45, P63, P100, P200	Kilogram
KO_020	KO_CT_M60_KG	Četinari	M60	≤ 60 %	P16, P45, P63, P100, P200	Kilogram
KO_021	KO_CT_M65_KG	Četinari	M65	≤ 65 %	P16, P45, P63, P100, P200	Kilogram
KO_022	KO_CT_M65+_KG	Četinari	M65+	>65 %	P16, P45, P63, P100, P200	Kilogram
KO_023	KO_ME_M20_KG	Mešavina drvnih vrsta	M20	≤ 20 %	P16, P45, P63, P100, P200	Kilogram
KO_024	KO_ME_M25_KG	Mešavina drvnih vrsta	M25	≤ 25 %	P16, P45, P63, P100, P200	Kilogram
KO_025	KO_ME_M30_KG	Mešavina drvnih vrsta	M30	≤ 30 %	P16, P45, P63, P100, P200	Kilogram
KO_026	KO_ME_M35_KG	Mešavina drvnih vrsta	M35	≤ 35 %	P16, P45, P63, P100, P200	Kilogram
KO_027	KO_ME_M40_KG	Mešavina drvnih vrsta	M40	≤ 40 %	P16, P45, P63, P100, P200	Kilogram
KO_028	KO_ME_M45_KG	Mešavina drvnih vrsta	M45	≤ 45 %	P16, P45, P63, P100, P200	Kilogram
KO_029	KO_ME_M50_KG	Mešavina drvnih vrsta	M50	≤ 50 %	P16, P45, P63, P100, P200	Kilogram
KO_030	KO_ME_M55_KG	Mešavina drvnih vrsta	M55	≤ 55 %	P16, P45, P63, P100, P200	Kilogram
KO_031	KO_ME_M60_KG	Mešavina drvnih vrsta	M60	≤ 60 %	P16, P45, P63, P100, P200	Kilogram
KO_032	KO_ME_M65_KG	Mešavina drvnih vrsta	M65	≤ 65 %	P16, P45, P63, P100, P200	Kilogram
KO_033	KO_ME_M65+_KG	Mešavina drvnih vrsta	M65+	>65 %	P16, P45, P63, P100, P200	Kilogram
KO_034	KO_L_M20_NM	Lišćari	M20	≤ 20 %	P16, P45, P63, P100, P200	Nasipni metar kubni
KO_035	KO_L_M25_NM	Lišćari	M25	≤ 25 %	P16, P45, P63, P100, P200	Nasipni metar kubni
KO_036	KO_L_M30_NM	Lišćari	M30	≤ 30 %	P16, P45, P63, P100, P200	Nasipni metar kubni
KO_037	KO_L_M35_NM	Lišćari	M35	≤ 35 %	P16, P45, P63, P100, P200	Nasipni metar kubni
KO_038	KO_L_M40_NM	Lišćari	M40	≤ 40 %	P16, P45, P63, P100, P200	Nasipni metar kubni
KO_039	KO_L_M45_NM	Lišćari	M45	≤ 45 %	P16, P45, P63, P100, P200	Nasipni metar kubni
KO_040	KO_L_M50_NM	Lišćari	M50	≤ 50 %	P16, P45, P63, P100, P200	Nasipni metar kubni

KO_041	KO_L_M55_NM	Lišćari	M55	≤ 55 %	P16, P45, P63, P100, P200	Nasipni metar kubni
KO_042	KO_L_M60_NM	Lišćari	M60	≤ 60 %	P16, P45, P63, P100, P200	Nasipni metar kubni
KO_043	KO_L_M65_NM	Lišćari	M65	≤ 65 %	P16, P45, P63, P100, P200	Nasipni metar kubni
KO_044	KO_CT_M65+_NM	Lišćari	M65+	>65 %	P16, P45, P63, P100, P200	Nasipni metar kubni
KO_045	KO_CT_M20_NM	Četinari	M20	≤ 20 %	P16, P45, P63, P100, P200	Nasipni metar kubni
KO_046	KO_CT_M25_NM	Četinari	M25	≤ 25 %	P16, P45, P63, P100, P200	Nasipni metar kubni
KO_047	KO_CT_M30_NM	Četinari	M30	≤ 30 %	P16, P45, P63, P100, P200	Nasipni metar kubni
KO_048	KO_CT_M35_NM	Četinari	M35	≤ 35 %	P16, P45, P63, P100, P200	Nasipni metar kubni
KO_049	KO_CT_M40_NM	Četinari	M40	≤ 40 %	P16, P45, P63, P100, P200	Nasipni metar kubni
KO_050	KO_CT_M45_NM	Četinari	M45	≤ 45 %	P16, P45, P63, P100, P200	Nasipni metar kubni
KO_051	KO_CT_M50_NM	Četinari	M50	≤ 50 %	P16, P45, P63, P100, P200	Nasipni metar kubni
KO_052	KO_CT_M55_NM	Četinari	M55	≤ 55 %	P16, P45, P63, P100, P200	Nasipni metar kubni
KO_053	KO_CT_M60_NM	Četinari	M60	≤ 60 %	P16, P45, P63, P100, P200	Nasipni metar kubni
KO_054	KO_CT_M65_NM	Četinari	M65	≤ 65 %	P16, P45, P63, P100, P200	Nasipni metar kubni
KO_055	KO_CT_M65+_NM	Četinari	M65+	>65 %	P16, P45, P63, P100, P200	Nasipni metar kubni
KO_056	KO_ME_M20_NM	Mešavina drvnih vrsta	M20	≤ 20 %	P16, P45, P63, P100, P200	Nasipni metar kubni
KO_057	KO_ME_M25_NM	Mešavina drvnih vrsta	M25	≤ 25 %	P16, P45, P63, P100, P200	Nasipni metar kubni
KO_058	KO_ME_M30_NM	Mešavina drvnih vrsta	M30	≤ 30 %	P16, P45, P63, P100, P200	Nasipni metar kubni
KO_059	KO_ME_M35_NM	Mešavina drvnih vrsta	M35	≤ 35 %	P16, P45, P63, P100, P200	Nasipni metar kubni
KO_060	KO_ME_M40_NM	Mešavina drvnih vrsta	M40	≤ 40 %	P16, P45, P63, P100, P200	Nasipni metar kubni
KO_061	KO_ME_M45_NM	Mešavina drvnih vrsta	M45	≤ 45 %	P16, P45, P63, P100, P200	Nasipni metar kubni
KO_062	KO_ME_M50_NM	Mešavina drvnih vrsta	M50	≤ 50 %	P16, P45, P63, P100, P200	Nasipni metar kubni
KO_063	KO_ME_M55_NM	Mešavina drvnih vrsta	M55	≤ 55 %	P16, P45, P63, P100, P200	Nasipni metar kubni

KO_064	KO_ME_M60_NM	Mešavina drvnih vrsta	M60	≤ 60 %	P16, P45, P63, P100, P200	Nasipni metar kubni
KO_065	KO_ME_M65_NM	Mešavina drvnih vrsta	M65	≤ 65 %	P16, P45, P63, P100, P200	Nasipni metar kubni
KO_066	KO_ME_M65+_NM	Mešavina drvnih vrsta	M65+	>65 %	P16, P45, P63, P100, P200	Nasipni metar kubni

5.14 Energetske vrednosti drveta pri različitom sadržaju vlage

Neto kalorijska vrednost drvnih goriva u najvećoj meri zavisi od vrste drveta, njegove gustine i vlage. U nastavku su date neto kalorijske vrednosti pri različitoj vlažnosti za tri najzastupljenije drvne vrste u Srbiji koje se koriste za energetske potrebe: bukvu, hrast kitnjak i smrču. Neto kalorijske vrednosti su date za tri tipa proizvoda: kompaktno drvo, ogrevno drvo metarsko i drvnu sečku granulacije G30.

Neto kalorijska vrednost drvnih goriva proizvedenih od bukve pri različitoj vlažnosti

VLAŽNOST (V) U %	BUKVA					
	Kompaktno drvo (solid wood)		Ogrevno drvo (1 m)		Drvna sečka (G30)	
	Gustina (kg/m^3)	Neto kalorijska vrednost (kWh/m^3)	Gustina (kg/prm)	Neto kalorijska vrednost (kWh/prm)	Nasipna gustina (kg/nm^3)	Neto kalorijska vrednost (kWh/nm^3)
0	680	3.400	476	2.380	272	1.360
10	697	3.088	488	2.162	279	1.235
15	707	2.931	495	2.052	283	1.172
20	718	2.773	502	1.941	287	1.109
25	744	2.665	521	1.865	298	1.066
30	798	2.629	558	1.840	319	1.052
35	859	2.587	601	1.811	344	1.035
40	930	2.538	651	1.777	372	1.015
45	1.015	2.481	711	1.737	406	992
50	1.117	2.412	782	1.688	447	965

Izvor: Glavonjić B. 2012.

Neto kalorijska vrednost drvnih goriva proizvedenih od hrasta pri različitoj vlažnosti

VLAŽNOST (V) U %	HRAST					
	Kompaktno drvo (solid wood)		Ogrevno drvo (1 m)		Drvna sečka (G30)	
	Gustina (kg/m^3)	Neto kalorijska vrednost (kWh/m^3)	Gustina (kg/prm)	Neto kalorijska vrednost (kWh/prm)	Nasipna gustina (kg/nm^3)	Neto kalorijska vrednost (kWh/nm^3)
0	670	3.350	469	2.345	268	1.340
10	700	3.104	490	2.173	280	1.242
15	718	2.980	503	2.086	287	1.192
20	738	2.853	517	1.997	295	1.141

25	772	2.763	540	1.934	309	1.105
30	827	2.726	579	1.908	331	1.090
35	891	2.683	623	1.878	356	1.073
40	965	2.632	675	1.842	386	1.053
45	1.053	2.572	737	1.801	421	1.029
50	1.158	2.501	810	1.751	463	1.000

Izvor: Glavonjić B. 2012.

Neto kalorijska vrednost drvnih goriva proizvedenih od smrče pri različitoj vlažnosti

VLAŽNOST (V) U %	SMRČA					
	Kompaktno drvo (solid wood)		Ogrevno drvo (1 m)		Drvna sečka (G30)	
	Gustina (kg/m^3)	Neto kalorijska vrednost (kWh/m^3)	Gustina (kg/prm)	Neto kalorijska vrednost (kWh/prm)	Nasipna gustina (kg/nm^3)	Neto kalorijska vrednost (kWh/nm^3)
0	430	2.269	301	1.589	172	908
10	453	2.123	317	1.486	181	849
20	483	1.973	338	1.381	193	789
30	542	1.893	380	1.325	217	757
40	633	1.832	443	1.282	253	733
50	759	1.746	532	1.222	304	698

Izvor: Glavonjić B. 2012.

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WOOD BIOMASS PRODUCT CATALOGUE

May, 2016

CONTENTS:

1 INTRODUCTION

The key purpose of the Biomass Product Catalogue is to provide clear and unambiguous principles for product specification, specification of product dimensions, units of measure in which they are produced and distributed to the market, and other elements relevant for efficient trading and good understanding between sellers and buyers. The Biomass Product Catalogue is also a good tool for reporting by producers and traders to relevant authorities, chambers, associations and other organisations.

The key **purpose of developing** the Biomass Product Catalogue is to serve as support to:

- Establishment of the market of woody biomass as a raw material for energy generation;
- Programmers and other actors involved in the process of establishing the data base for the purpose of trading in these products in the **biomass exchange and**
- **Direct participants in trading in order to better understand the characteristics of products which are traded**.

For this reason every biomass product has been assigned a relevant generic code, including within it a trading code with the key elements enabling clear recognition of products and product characteristics (primarily: class of quality, moisture content, dimensions, and units of measurement).

The definitions of trading codes are based on the group of standards SRPS EN ISO 17225/1-6: 2015 which were applicable at the time of developing this Catalogue. It is therefore recommended to follow the future changes to this group of standards and to promptly update the trading codes for products affected by changes.

In order to achieve efficient trading on the biomass exchange and to prevent misunderstanding among trading participants it is recommended that trading participants study well all the elements of this Catalogue and the provisions of standards for individual fuels from the stated groups of standards.

2 DESCRIPTION AND KEY CHARACTERISTICS OF THE MOST SIGNIFICANT TYPES OF WOOD FUELS

Given the numerous specific features of different wood fuels, this document shall present the key characteristics and parameters for:

- Firewood;
- Wood chips;
- Wood briquettes;
- Wood pellets, and
- Charcoal.

The above product selection is a result of the fact that they are the most frequent wood biomass product types traded in Serbia.

It should be noted that at the time of development of the Biomass Product Catalogues the only existing regulations in Serbia are those relevant to maximum allowed weight of the loaded means of transport of wood fuels in bulk (sawdust, wood chips, tree bark, logging residues). Technical regulations on the obligation and manner of testing the quality of wood fuels placed in the market and the associated mandatory possession of relevant test certificates are not existent at present.

The following tables present for each type of wood fuel the relevant standards used for testing and measurement of individual parameters.

2.1 Firewood

Firewood is cut or split fuel wood ready for use in households in hard wood burning appliances like stoves, fireplaces or central heating systems. The most frequently used length in which firewood is produced and distributed is 1 meter.

Apart from being used in residential buildings, firewood is also used as fuel in small scale commercial buildings and public buildings. It is therefore necessary for firewood to possess certain quality as the said buildings usually have burning appliances of small capacity, without advanced controls and treatment of exhaust gases and are most usually not operated by professionals specializing in heating.

According to standard SRPS EN ISO 17225-5:2015 firewood is classified in three classes: A1, A2, and B class. Firewood meeting the criteria for class A1 and A2 is suitable for use in stoves and fireplaces, and firewood of class B in wood burning boilers.

The key parameters for individual characteristics within the said classes are presented in the following table.

CHARACTERISTICS	UNITS	A1	A2	B
Origin and source, ISO 17225-1		1.1.3 Stem-wood 1.2.1 Chemically untreated wood residues	1.1.1 Whole trees without roots 1.1.3 Stem-wood 1.1.4 Logging residues 1.2.1 Chemically untreated wood residues	**1.1.1 Whole trees without roots** **1.1.3 Stem-wood** **1.1.4 Logging residues** **1.2.1 Chemically untreated wood residues**

Type of wood		To be stated	**To be stated**
Diameter, D	cm	D2 ≤ 2 D5 2 < D ≤ 5 D15 5 < D ≤ 15 D15+ > 15 (Actual value to be stated)	**D15 5 < D ≤ 15** **D15+ > 15 (Actual value to be stated)**
Length, L [a]	cm	L20 ≤ 20 (±2 cm) L25 ≤ 25 (±2 cm) L30 ≤ 30 (±2 cm) L33 ≤ 33 (±2 cm) L40 ≤ 40 (±2 cm) L50 ≤ 50 (±4 cm) L100 ≤ 100 (±5 cm)	**L30 ≤ 30 (±2 cm)** **L33 ≤ 33 (±2 cm)** **L40 ≤ 40 (±2 cm)** **L50 ≤ 50 (±4 cm)** **L100 ≤ 100 (±5 cm)**
Moisture, M, **ISO 18134-1,** **ISO 18134-2**	% m as received (measured with respect to the wet state)	M20 ≤ 20 M25 ≤ 25	**M20 ≤ 20** **M25 ≤ 25** **M35 ≤ 35**
Net calorific value, Q, [d]**,** **ISO 18125**	**MJ/prm or kWh/prm or MJ/kg or kWh/kg, as received**	**Recommendation to be stated.**	

a) It is allowed that 15 % of firewood can be shorter than the required length, including the limit value.

The most frequently used unit of measurement to denote the volume of firewood is stacked meter and cubic meter. Volume of smaller packaging of cut wood can also be expressed in kilograms. Volume is expressed with the accuracy of three decimal points. Measuring the dimensions of all forms of firewood is done by a measuring device, and deciduous trees are supplied and measured with the bark on.

2.2 Wood chips

Wood chips are cut or chipped woody biomass produced by mechanically cutting or chipping wood using sharp tools (such as knives) into smaller pieces of defined particle size so that they can be used in automatic boilers for heating of bigger houses, residential buildings, public buildings or buildings used for social purposes. It is most often produced by cutting or chopping stem-wood, bigger and smaller forest residues, wood residues resulting from wood processing, wood from construction industry, packaging wood and wood originating outside of forests (parks, tree avenues).

Pieces of wood chips are of approximately rectangular shape and their size is regulated by standard SRPS EN ISO 17225-4:2015. Values of parameters and share of individual fractions in the total supplied volume of wood chips are presented in the following table.

Dimensions (mm), ISO 17827-1				
The main fraction[a] (minimum 60 % m),		Small size fraction, % m (≤ 3.15 mm)	Bug size fraction, % m, (Length of particle, mm)	Highest length of particles, mm
P16S	3,15 mm < *P* ≤ 16 mm	≤ 15 %	≤ 6 % (>31.5 mm)	≤ 45 mm
P31S	3.15 mm < *P* ≤ 31.5 mm	≤ 10 %	≤ 6 % (> 45 mm)	≤ 150 mm

P45S	3.15 mm < *P* ≤ 45 mm	≤ 10 %	≤ 10 % (> 63 mm)	≤ 200 mm

a Numerical values (P-class) of dimensions refer to the particles size passing through the sieve with round openings of the said size (ISO 17827-1). The lowest possible size should be stated. For wood chips only one class should be stated.

b The length and surface of the cross-section should be determined only for those particles found in the bigger size fraction. Maximum 2 pieces of the sample of about *10 l* can be greater than the biggest length if the surface of the cross section is < 0.5 cm^2.

According to standard SRPS EN ISO 17225-4:2015 wood chips are classified into four classes: A1, A2, B1, and B2 class.

The key parameters for individual characteristics within the said classes are presented in the following table.

PROPERTY CLASS	UNIT OF MEASUREMENT	A		B	
		1	2	1	2
Origin and source ISO 17225-1		1.1.1 Whole trees without roots 1.1.3 Stem-wood 1.1.4 Logging residues 1.2.1 Chemically untreated wood residues	1.1.1 Whole trees without roots [a] 1.1.3 Stem-wood 1.1.4 Logging residues 1.2.1 Chemically untreated wood residues	1.1 Forest, plantation and other virgin wood [b] 1.2.1 Chemically untreated wood residues	**1.1 Forest, plantation and other virgin wood [b]** **1.2. By-products and residues from wood processing industry** **1.3.1. Chemically untreated used wood**
Particle size, P, ISO 17827-1	**Mm**	**Selected from the previous table**		**Selected from the previous table**	

MOISTURE, M [c], ISO 18134-1, ISO 18134-2	% M	M10 ≤ 10 M25 ≤ 25	M35 ≤ 35	MAXIMUM VALUE TO BE STATED
Ash content, A,	% m dry	A1.0 ≤ 1,0	A1.5 ≤ 1,5	**A3.0 ≤ 3.0**
Bulk density, BD[d], ISO 17828	kg/bulk m^3 as received	BD150 ≥ 150 BD200 ≥ 200 BD250 ≥ 250	BD150 ≥ 150 BD200 ≥ 200 BD250 ≥ 250 BD300 ≥ 300	**Minimum value to be stated**

a Excluding class 1.1.1.3 short rotation coppice, if there is reason to suspect soil contamination or if planting was used for sequestration of chemicals or growing trees have been fertilized by sewage sludge (resulting from waste water treatment or a chemical process).

b Excluding class 1.1.5 stumps/roots and 1.1.6 bark

c The lowest possible property class to be stated. Certain boilers require minimum moisture content, which should be stated. Moisture class M10 refers to artificially dried wood chips.

d Bulk density of soft wood is lower than of hard wood; see informative Annex A of the standard SRPS EN ISO 17225-4:2015.

Classes of properties **A1** and **A2** refer to fully virgin wood and chemically untreated wood residues. A1 refers to fuels with lower ash content, which indicates absence or low presence of bark, and lower moisture content,

while class A2 has a somewhat higher ash content and moisture content. B1 has broader origin and source than class A and includes other materials such as fast rotation coppice forests, woof from gardens and plantations, etc., and chemically untreated industrial by-products and residues. Class of properties B2 includes also chemically treated industrial by-products and residues and chemically untreated used wood.

Measuring of moisture content of wood chips is performed by different devices with different levels of accuracy, measuring speed, and therefore different price. Therefore, the choice of device for measuring the moisture content of wood chips depends on the required accuracy and speed of measurement. Figure 1 represents a model of a device which is frequently used in practice, characterized by relatively speedy measurement with relatively high accuracy.

The device is supplied together with a test tube of adequate dimensions (primarily the length) enabling the necessary quantity of wood chips to be put inside. The length of measuring probes of this device is up to 70 cm which enables high precision of measurement along the whole sample (test tube).

Figure 1. Wood chips moisture content measuring device

Since moisture content has a major impact on the price it is necessary to measure it as accurately as possible. This refers especially to supplies by producers and traders to big heating plants with annual consumption of several hundreds of tons. In such deliveries each percentage of moisture content can mean great losses or benefits for the supplier or user. In this respect deliveries at present are most often expressed in weight by atro-tons.

Atro-ton is weight of absolutely dry wood (moisture content 0%). At such moisture content the wood has its maximum energy value, meaning that the buyer by paying for the wood chips is paying for energy and not for water. A practical manner of calculating deliveries and payments for wood chips is presented in the following example:

Example 1. The net weight of beech wood chips is 5,500 kg, and the measured moisture content is 30% (meaning that 70% is the wood mass). The energy value of 1 kg of beech wood of moisture content is 5.0 kWh/kg. In this specific case the buyer has purchased the following quantity of energy:

5,500 kg x 0.7 = 3,850 atro kg x 5 kWh/kg = 19,250 kWh

Having in mind the method of calculating the atro net weight and energy of wood chips, its prices are significantly higher than for the wood chips delivered and calculated with a certain percentage of moisture content.

Apart from moisture content, the ash content is the next significant characteristic of wood chips quality. The ash content resulting from the combustion process depends mostly on the presence of bark and small-size fraction in supplied wood chips. There are therefore three levels of ash content:

For class **A1** the maximum allowed ash content shall not exceed **1%** mass percentage in dry state;

For class **A2** the maximum allowed ash content shall not exceed **1.5%** mass percentage in dry state; and

For classes **B1 and B2** the maximum allowed ash content shall not exceed 3**%** mass percentage in dry state.

Dimensions of wood chips are also of great relevance for reliable boiler operation. Operational problems mostly frequently occurring in boilers (congestion) are caused by inadequate dimensions and quality of wood of wood

chips. Measurement of dimensions and the share of individual fractions in the total supplied quantity of wood chips are performed according to provisions of ISO standard 17827-1.

2.3 Wood briquettes

Wood briquettes are densified biofuels produced with or without additives in the shape of cubiform, prismatic or cylindrical units with diameter greater than 25 mm, produced by compressing milled biomass in appropriate presses (mechanical or hydraulic).

Additives are substances introduced to the fuel feed stock in order to enhance the quality of fuel (for example, combustion properties), to reduce emissions or increase production efficiency. The quantity of additives added is limited to the minimum of 2% mass percentage relative to the quantity as received. Type and quantity of additives must always be stated.

According to standard SRPS EN ISO 17225-3:2015 wood briquettes are classified in three classes: A1, A2, and B, and the key parameters for individual characteristics of above classes are stated in the following table:

CLASS OF CHARACTERISTIC	UNITS	A		B [A]
		1	2	
Origin and source **ISO 17225-1**		1.1.3 Stem-wood 1.2.1 Chemically untreated wood residues [b]	1.1.1 Whole trees without roots 1.1.3 Stem-wood 1.1.4 Logging residues 1.2.1 Chemically untreated wood residues [b]	**1.1 Forest, plantation and other virgin wood** **1.2 By-products and residues from wood processing industry** **1.3.1 Chemically untreated used wood**
Diameter(D) or Length (L_1), width (L_2) and height (L_3)	Vlm	Diameter, width, height and height to be stated	Diameter, width, height and height to be stated	**Diameter, width, height and height to be stated**
	Shape	Determined according to standard SRPS EN ISO 17225-3:2015	Determined according to standard SRPS EN ISO 17225-3:2015	**Determined according to standard SRPS EN ISO 17225-3:2015**
Moisture, M, **ISO 18134-1,** **ISO 18134-2**	% m as received	M12 ≤ 12	M15 ≤ 15	**M15 ≤ 15**
Ash content, A, ISO 18122	% m dry	A1.0 ≤ 1.0	A1.5 ≤ 1.5	**A3.0 ≤ 3.0**
Particles density, DE **ISO 18847**	g/cm^3 as received	DE1.0 ≥ 1.0	DE0.9 ≥ 0.9	**DE0.9 ≥ 0.9**
Additives [c]	% m as received	≤ 2 Type and quantity are to be stated	≤ 2 Type and quantity are to be stated	**≤ 2** **Type and quantity are to be stated**
Net calorific value, Q, **ISO 18125**	MJ/kg or kWh/kg as received	Q15.5 ≥ 15.5 or Q4.3 ≥ 4.3	Q15.3 ≥ 15.3 or Q4.25 ≥ 4.25	**Q14.9 ≥ 14.9 or** **Q4.15 ≥ 4.15**
Nitrogen, N, ISO 16948	% m dry	N0.3 ≤ 0.3	N0.5 ≤ 0.5	**N1.0 ≤ 1.0**
Sulphur, S, ISO 16994	% m dry	S0.04 ≤ 0.04	S0.04 ≤ 0.04	**S0.05 ≤ 0.05**

a Class B is not recommended for baking ovens.

b The acceptable substances include neglectable levels of glues, grease and other timber production used in sawmills during production of timber and timber products from virgin wood provided that all chemical parameters of briquettes are clearly within the limits and/or concentrations too low to be concerned with.

c Type of additives used in order to enhance production, delivery and combustion (for example, pressing aids, slagging inhibitors or other additives such as starch, corn flour, potato flour, vegetable oil, lignin).

Wood briquettes are calculated and delivered by weight (kilogram or ton). The key characteristics controlled at the time of delivery, apart from weight, include moisture content, ash content and net calorific value. With respect to moisture content, in the best quality class A1, it should not exceed 12%, while the maximum ash content is 1% mass percent relative to dry state. Net calorific value of A1 quality class must be equal to or greater than 4.3 kWh/kg as received. As for emissions of nitrogen and sulphur during combustion, the relevant maximum values of class A1 are 0.3% masse percent relative to dry state for nitrogen and maximum 0.04% mass percent for sulphur relative to dry state.

Class A2 allows a somewhat higher content of ash and nitrogen, while class B allows briquettes produced from chemically treated biomass of industrial by-products, wood residues and chemically untreated used wood.

2.4 Wood pellets

Wood pellets are densified biofuels made from woody biomass with or without additives, usually of cylindrical form, random length typically 5 to 40 mm and diameter up to 25 mm and broken ends.

Pellets are usually produced in a die, with total moisture content less than 10 % of their mass on wet basis. Standard SRPS EN ISO 17225-2:2015 differentiates between wood pellets for commercial use and for use in residential buildings and wood pellets for industrial use. Depending on the purpose relevant parameters have been determined for certain properties.

A review of key parameters for individual properties of wood pellets for **commercial and residential use** is presented in the following table (according to SRPS EN ISO 17225-2:2015).

PROPERTY CLASS	UNIT	A1	A2	B
Origin and source **ISO 17225-1**		1.1.3 Stem-wood 1.2.1 Chemically untreated wood residues [a]	1.1.1 Whole trees without roots 1.1.3 Stem-wood 1.1.4 Logging residues 1.2.1 Chemically untreated wood residues [a]	**1.1 Forest, plantation and other virgin wood** **1.2 By-products and residues from wood processing industry** **1.3.1 Chemically untreated used wood**
Diameter, D [b] and Length L [c] **ISO 17829**	mm	D06, 6 ± 1; 3.15 < L ≤ 40 D08, 8 ± 1; 3.15 < L ≤ 40	D06, 6 ± 1; 3.15 < L ≤ 40 D08, 8 ± 1; 3.15 < L ≤ 40	**D06, 6 ± 1;** **3.15 < L ≤ 40** **D08, 8 ± 1;** **3.15 < L ≤ 40**
Moisture, M, **ISO 18134-1, ISO 18134-2**	% m as received, wet state	M10 ≤ 10	M10 ≤ 10	**M10 ≤ 10**
Ash content, A [d] **ISO 18122**	% m dry	A0.7 ≤ 0.7	A1.2 ≤ 1.2	**A2.0 ≤ 2.0**

Mechanical durability, DU, ISO 17831-1	% m as received	DU97.5 ≥ 97.5	DU97.5 ≥ 97.5	**DU96.5 ≥ 96.5**
Small size particles, fines, F [e] ISO 18846	% m as received	F1.0 ≤ 1.0	F1.0 ≤ 1.0	**F1.0 ≤ 1.0**
Additives [f]	% m as received	≤ 2 Type and quantity are to be stated	≤ 2 Type and quantity are to be stated	**≤ 2** **Type and quantity are to be stated**
Net calorific value, Q, ISO 18125	MJ/kg or kWh/kg as received	Q16.5 ≥ 16.5 or Q4.6 ≥ 4.6	Q16.5 ≥ 16.5 or Q4.6 ≥ 4.6	**Q16.5 ≥ 16.5 or Q4.6 ≥ 4.6**
Bulk density, BD [g] ISO 17828	kg/m^3 as received	BD600 ≥ 600	BD600 ≥ 600	**BD600 ≥ 600**
Nitrogen, N, ISO 16948	% m dry	N0.3 ≤ 0.3	N0.5 ≤ 0.5	**N1.0 ≤ 1.0**
Sulphur, S, ISO 16994	% m dry	S0.04 ≤ 0.04	S0.05 ≤ 0.05	**S0.05 ≤ 0.05**

a The acceptable substances include neglectable levels of glues, grease and other timber production used in sawmills during production of timber and timber products from virgin wood provided that all chemical parameters of briquettes are clearly within the limits and/or concentrations too low to be concerned with.

b The selected size of pellets D06 or D08 to be stated.

c Amount of pellets longer than 40 mm can be 1% m. Maximum length shall ≤ 45 mm. Pellets are longer than 3.15 mm if they stay on a round-hole sieve of 3.15 mm. Recommendation to be stated the quantity of pellets shorter than 10 mm, % m.

d For household burners and stoves the recommended ash content should be < 0.5 %.

e At factory gate in bulk transport (at the time of loading) and in small (up to 20 kg) and big bags (at the time of packaging) or at the time of delivery to the end user.

f Type of additives to enhance production, delivery or combustion (for example, pressing aids, slagging inhibitors or any other additive such as starch, corn flour, potato flour, vegetable oil, lignin).

g Ii is recommended that the actual value of bulk density should be stated. This is specifically important for household burners and stoves with no automatic control of air supply and thus sensitive to variations in bulk density. Maximum value of bulk density is 750 kg/m^3.

Wood pellets are calculated and delivered per weight (kilogram or ton). Apart from weight, the key characteristics measured at the time of delivery include moisture content, ash content and net calorific value. Compared to briquettes, the minimum net calorific value of wood pellets is higher in all classes of quality and is greater to or equal to 4.6 kWh/kg. The maximum moisture content of wood pellets must not exceed 10% mass percent as received (wet weight). Due to characteristics of devices used for combustion of wood pellets, the ash content remaining after combustion for A1 quality should not exceed 0.7% mass percent relative to dry state. This is an exceptionally strict criterion due to which A1 quality class of wood pellets must be produced of virgin wood without or with very little bark.

With respect to **wood pellets for industrial use** the quality criteria are somewhat different. According to standard SRPS EN ISO 17225-2:2015 wood pellets for industrial use are divided into three classes: I1, I2, and I3. Values of parameters of individual properties of wood pellets in individual classes are presented in the following table.

PROPERTY CLASS	UNIT	I1	I2	I3
Origin and source **ISO 17225-1**		1.1 Forest, plantation and other virgin wood 1.2.1 Chemically untreated wood residues [a]	1.1 Forest, plantation and other virgin wood 1.2.1 Chemically untreated wood residues [a]	**1.1 Forest, plantation and other virgin wood** **1.2 By-products and residues from wood processing industry** **1.3.1 Chemically untreated used wood**
Diameter, D [b] and Length L [c] **ISO 17829**	mm	D06, 6 ± 1; 3.15 < L ≤ 40 D08, 8 ± 1; 3.15 < L ≤ 40	D06, 6 ± 1; 3.15 < L ≤ 40 D08, 8 ± 1; 3.15 < L ≤ 40 D10, 10 ± 1; 3.15 < L ≤ 40	**D06, 6 ± 1;** **3.15 < L ≤ 40** **D08, 8 ± 1;** **3.15 < L ≤ 40** **D10, 10 ± 1;** **3.15 < L ≤ 40** **D12, 12 ± 1;** **3.15 < L ≤ 40**
Moisture, M, **ISO 18134-1, ISO 18134-2**	% m as received	M10 ≤ 10	M10 ≤ 10	**M10 ≤ 10**
Ash content, A, ISO 18122	% m dry	A1.0 ≤ 1.0	A1.5 ≤ 1.5	**A3.0 ≤ 3.0**
Mechanical durability, DU, ISO 17831-1	% m as received	97.5 ≤ DU ≤ 99.0	97,0 ≤ DU ≤ 99.0	**96.5 ≤ DU ≤ 99.0**
Small size particles, fines, F [d] **ISO 18846**	% m as received	F4.0 ≤ 4.0	F5.0 ≤ 5.0	**F6.0 ≤ 6.0**
Additives [e]	% m as received	< 3 Type and quantity are to be stated	< 3 Type and quantity are to be stated	**< 3** **Type and quantity are to be stated**
Net calorific value, Q, **ISO 18125**	MJ/kg as received	Q16.5 ≥ 16.5	Q16.5 ≥ 16.5	**Q16.5 ≥ 16.5**
Bulk density, BD [f], ISO 17828	kg/m^3	BD600 ≥ 600	BD600 ≥ 600	**BD600 ≥ 600**
Nitrogen, N, ISO 16948	% m dry	N0.3 ≤ 0.3	N0.3 ≤ 0.3	**N0.6 ≤ 0.6**
Sulphur, S, ISO 16994	% m dry	S0.05 ≤ 0.05	S0.05 ≤ 0.05	**S0.05 ≤ 0.05**

a Negligible amounts of glue, grease and other timber production additives used in sawmills during production of timber and timber products from virgin wood are acceptable, if all chemical parameters of pellets are clearly within the limits and/or concentrations which are too small to be concerned with.

b Selected size of pellets to be stated D06, D08, D10 or D12.

c The amount of pellets longer than 40 mm can be 1 w-%. Maximum length shall be ≤ 45 mm. Pellets are longer than 3.15 mm if they stay on a round-hole sieve of 3.15 mm. Recommendation should be stated for amount of pellets shorter than 10 mm, w-%.

d At factory gate in bulk transport (at the time of loading) and in small (up to 20 kg) and big bags (at the time of packaging) or at the time of

delivery to the end user.

e Type of additives to enhance production, delivery or combustion (for example, pressing aids, slagging inhibitors or any other additive such as starch, corn flour, potato flour, vegetable oil, lignin).

f Maximum bulk density is 750 kg/m^3.

The most significant differences in parameters for wood pellets for industrial use compared to use in residential buildings refer to allowed dimensions, ash content and mechanical durability. In this respect, wood pellets for industrial use of class I2 it is allowed to use wood pellets of diameter from 6mm - 10 mm, and for class I3 from 6mm - 12 mm. Allowed ash content for class **I1** is up to 1 w-% in dry state, and for class **I3** up to 3w-%. The share of fines is up to 4% mass percentage as received for class I1 and up to 6% mass for class I3. These are the key values for quality classes compared to classes intended for commercial use and use in residential buildings.

2.5 Charcoal

Charcoal is solid biofuels produced by biomass carbonization, distillation and pyrolysis. The feed stock for production of charcoal is virgin wood from forests and outside forests, fruit biomass and biomass from chemically untreated by-products and residues from industrial wood processing.

Charcoal is predominantly produced in two ways:

- Traditional methods of carbonizing wood into charcoal in charcoaling devices, and
- Industrial methods of carbonization in retorts.

Irrespective of the method of charcoal production the standard SRPS EN ISO 17225-1:2015 prescribes the moisture content, the dimensions and the share of individual size fractions in the total amount of delivered charcoal, the ash content, the amount of fixed carbon and the bulk density. The following table presents the values of parameters for individual characteristics relevant to trading of charcoal.

Origin		Forest, plantation and other virgin wood Chemically untreated wood by-products and residues; Fruit biomass	
Form traded		Charcoal	
Dimensions (mm)			
	Key fractions (minimum 75 % m), mm	Fines, % m (< 10 mm)	Big-size fractions, (% m), maximum particle length, mm
P150	16 mm ≤ *P* ≤ 150 mm	≤ 7 %	≤ 10 % > 100 mm, all< 150mm
Moisture, M (% m as received) ISO 18134-1, ISO 18134-2			
M8 M10	≤ 8 % ≤ 10 %		
Ash content, A (% m dry) ISO 18122			
A5.0 A8.0 A8.0+	≤ 5.0 % ≤ 8.0 % > 8.0 % (Maximum value to be stated)		

Fixed carbon, C[a] (% m dry)	
C60 C75	≥ 60 % ≥ 75 %
Bulk density (BD) (kg/m^3 as received) ISO 17828	
BD130 BD150	≥ 130 kg/m^3 ≥ 150 kg/m^3
Net calorific value, Q (MJ/kg or kWh/kg as received) ISO 18125	Minimum value to be stated
a Fixed carbon (%) is calculated as follows: 100 – [Moisture (% m) + ash content (% m) + volatile matter (% m)]. All percentages apply to the same moisture state.	

3 REVIEW OF SRPS EN ISO STANDARDS AND CERTIFIED LABORATORIES FOR WOOD FUELS TESTING IN SERBIA

In parallel with the development of production of different types of biofuels there was an ongoing process of developing relevant standards in order to test their quality and other parameters relevant to final consumption.

In this respect the first standards for wood fuels were developed in Germany, Austria and Sweden. The national standards of these countries were the basis for the development of uniform European standards for wood fuels within the European Committee for Standardization. In January 2010 standards marked EN 14961/1-5:2010 for wood fuels were adopted at the European level.

Intensive development of trading in certain wood fuels, primarily wood pellets, in recent years resulted in the fact that ISO developed standards for wood fuels applicable to production and trading at global level. The European Committee for Standardization, and consequently the Serbian Institute for Standardization, adopted these standards in 2015, meaning that Europe, and Serbia, adopted new wood fuel standards marked **SRPS EN ISO 17225/1-5:2015.** This group of standards includes standards for all types of wood fuels individually:

SRPS EN ISO 17225-1/2015: Specifications and classes of fuel — Part 1: General requirements

SRPS EN ISO 17225-2/2015: Specifications and classes of fuel — Part 2: Classification of wood pellets

SRPS EN ISO 17225-2/2015: Specifications and classes of fuel — Part 3: Classification of wood briquettes

SRPS EN ISO 17225-2/2015: Specifications and classes of fuel — Part 4: Classification of wood chips

SRPS EN ISO 17225-2/2015: Specifications and classes of fuel — Part 5: Classification of firewood

The said group of standards, individual standards from the ISO group are stated, based on which individual characteristics are tested. Thus, for instance, testing of moisture content of wood fuels is performed according to standard ISO 18134/1-2, and testing of net calorific value according to standard ISO 18125. Different other ISO standards are used to test other parameters of different types of wood fuels.

At the time of development of this Catalogue the testing of characteristics of wood fuels is performed in a comprehensive manner only by the laboratory **JUGOINSPEKT, a.d. from Belgrade**. Testing of individual characteristics of wood fuels (but not all as provided in the standard) is performed also by the following laboratories:

1. SGS from Belgrade;

2. Laboratory for testing of plywood at the Faculty of Forestry in Belgrade;
3. Laboratory for fuels and combustion at the Faculty of Mechanical Engineering in Belgrade;
4. Laboratory of the Power Plant “Nikola Tesla” in Obrenovac.

The said laboratories are equipped for testing certain characteristics defined by standards of group SRPS EN ISO 17225 (predominantly the ash content, moisture content, calorific value and dimensions). These laboratories are still not fully equipped for testing of all characteristics of wood fuels stated in this type of standards.

In order to monitor the characteristics of wood pellets within their own production a number of wood pellet producers in Serbia have individual devices for testing predominantly the moisture content and mechanical durability.

It is expected that with the adoption of technical regulations for wood fuels the number of testing laboratories will increase to meet the increasing commercial interest.

4 DESCRIPTION OF INDIVIDUAL PARAMETERS OF TRADING CODES

4.1 Common elements

For each product, this Catalogue defines the general and special parameters. The general parameters include:

- Type of product;
- Type of wood;
- Moisture content (of wood);
- Dimensions, and
- Unit of measurement.

Special parameters for individual products include quality classes in which such products are produced and distributed.

This kind of approach resulted from the provisions of standards which were the basis for the Catalogue, since different classes of quality cover different values of certain parameters which need to be complied with and considered during trading.

Product characteristics and the relevant parameters are presented in individual tables in item 3 of this Catalogue, and their trading codes are presented as abbreviated parameters in the following sequence:

Trading code = Product type_Type of wood_Moisture_Unit of measurement.

Where it was necessary for certain products, due to provisions of standards and the need to simplify and make trading more easily understandable, the abbreviations also include**: Class of Quality and Dimensions.** Trading codes for such products include 5 numbers, specifically:

Trading code= Product type_Type of wood_Moisture_class_Dimensions.

All the selected parameters included in the trading code are measurable and as such they facilitate trading and reduce the risk of misunderstanding among actors participating in the process.

Characteristics of individual parameters are presented in the following part of this document.

4.1.1 Product type

For the purposes of trading in the biomass exchange parameters are defined for the following product types:

- Multi-meter roundwood;
- Firewood (by meter and split);
- Wood chips;
- Wood briquettes;
- Wood pellets;

- Sawdust
- Trimmings;
- Logging residues;
- Charcoal, and
- Bark.

The selected products are the most important and most frequently traded types in practice. The stated trading refers to trading in individual products. However, in practice it is possible also to trade in a combination of products, for instance ''Combination of sawdust and wood chips''. Combinations of key products are not often encountered in practice and in such cases there are no defined ratios between individual components in the total quantity or volume which is subject to trading. For this reason, despite the fact that trading codes are stated in the tables for individual product types in this Catalogue which could give rise to a great number of combinations, if it happens that there is an offer for a combination not covered by the trading codes in the Catalogue, it is possible to enter a more detailed description in the field OTHER PRODUCTS in order to provide a description of the product or combination of products offered. For instance, if a potential actor intends to offer for trading a product which is a combination of sawdust and wood chips, he can do so by entering in the field OTHER PRODUCTS the name ''Wood chips in combination with sawdust'', after which it is necessary to provide a more detailed description of the product.

4.1.2 Types of wood

Wood biomass products are produced and distributed to the market as products produced of only one type of wood or of a combination of two or more types of wood. Since the net calorific value of fuel depends on the type of wood, its density, moisture and chemical structure, it is necessary in the trading code of every product to denote the relevant mark indicating if the product is produced of only one type of wood and which type or as a mixture of wood types. In this respect, for the purposes of this Catalogue, the wood types have been classified as follows:

- High-density deciduous tree wood (oak, beech, ash, maple, etc.);
- Low-density deciduous tree wood (poplar, willow, linden, etc.);
- Coniferous tree wood (spruce, fir, pine, etc.);
- Mixed wood (high-density deciduous tree wood/coniferous tree wood, etc.).

4.1.3 Moisture content (of wood)

Moisture content of wood is defined as the ration of water mass and wood mass in wet state (relative moisture) or water mass and wood mass in absolutely dry state (absolute moisture). In the trading of wood fuels the most used term is relative moisture of wood (fuel) expressed in percentages.

Having in mind that wood is hydroscopic material (taking up and releasing water depending on relative air humidity) and the related different moisture levels depending on the time elapsing between logging and use, for the purposes of this Catalogue wood has been divided in terms of its moisture as follows:

- **Fresh cut wood** (fresh cut wood with moisture exceeding 40%);
- **Forest dried wood** (wood with moisture content of 20%-40%. This includes wood that has dried for at least 6 months after logging or wood from winter season logging where at least 4 months have passes since logging);

- **Air dried wood** (wood with moisture content of 15%-20%. This includes wood that has dried for at least one year in sunny and airy storehouses);
- **Technically dry wood** (wood with moisture content of 6%-15%. This includes technically (artificially) dried wood in heated wood drying storehouses).

The above division of wood based on moisture is used in this Catalogue for the following types of products: multi-meter roundwood, trimmings, wood residues and sawdust.

For other products the moisture content is defined by standards for individual classes in which these fuels are produced and distributed to the market. Thus, for instance, the marking M30 denotes that for this level the allowed moisture content in the fuel is less than or equal to 30% (≤ 30).

Moisture values stated in the relevant tables refer to moisture contained in the fuel as delivered (relative moisture).

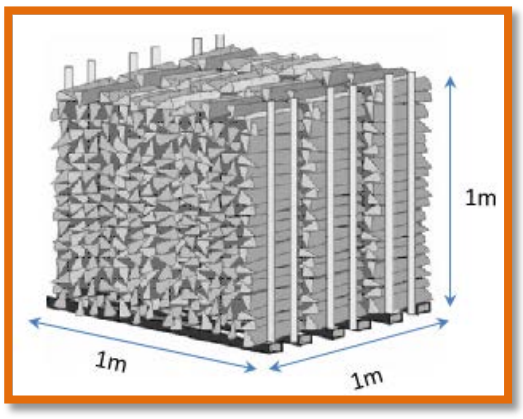
4.1.4 Dimensions

For all types of wood fuels contained in this Catalogue the standard dimensions are stated in which they are most often produced and traded. Dimensions also include the relevant deviations from the nominal measures expressed as ± value in the unit of measurement. For example: firewood by meter has the nominal measure of 100 cm, and the allowed deviation is ±5 cm. The trading denotation for this dimension is L100 ≤ 100 (±5 cm).

4.1.5 Units of measurement

Depending on the most frequently used manner of trading in wood fuels for the purposes of this Catalogue the following units of measurement are used:

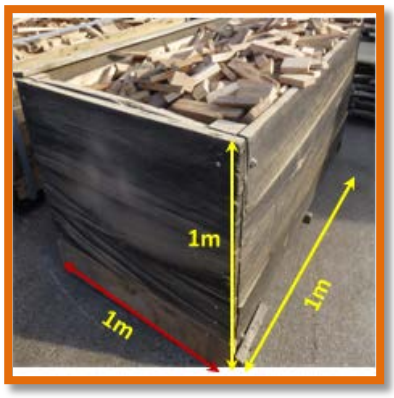
Stacked cubic meter (prm) is a unit of measurement for wood stacked so as to take up a space of 1 m^3 with interspaces between individual logs of wood or pieces within the stack.



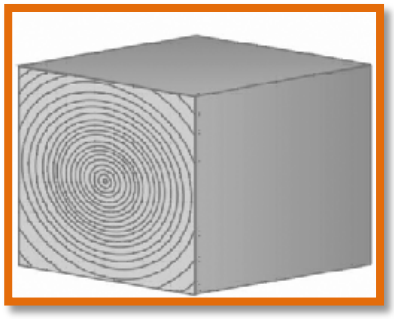
Stacked cubic meter is the unit most often used for firewood and trimmings.

Loose cubic meter (nm) is a unit of measurement for loose materials (ex: wood chips, sawdust, pieces of split wood, bark). Loose cubic meter is a stack of volume of 1 m^3 in which randomly stacked wood pieces are placed

(with respect to split wood) or wood chips or sawdust or bark loaded by loading devices without special stacking (compression).



Cubic meter (m^3) is a unit of measurement for compact wood of volume of 1 m^3. It is most often used to express the volume of multi-meter logs in forestry and timber industry to express volume for wood products in wood processing.

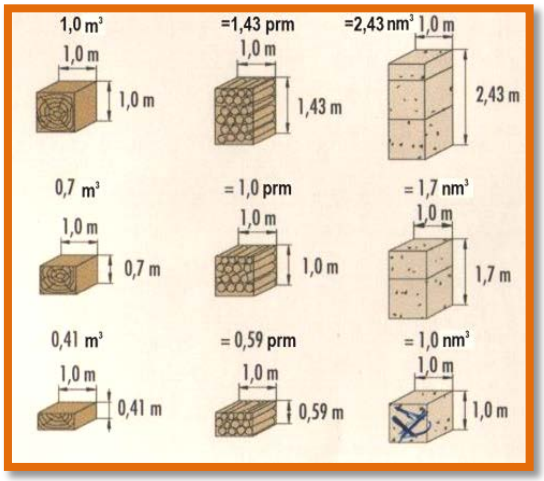


In order to facilitate trading (sale and purchasing) of different forms of wood fuels the relevant coefficients are used to calculate their unit of measurement.

Tabela 1. Jedinice mere pojedinih tipova drvnih goriva i koeficijenti za njihovo preračunavanje

Sortimenti	Kompaktno drvo (solid wood)	Ogrevno drvo metarsko	Ogrevno drvo cepano		Drvna sečka	
			složeno	rasuto	Dimenzija (finoća) G30	Dimenzija (finoća) G50
	m^3	prm	prm	nm^3	nm^3	nm^3
1 m^3 kompaktnog drveta (solid wood)	1	1,43	1,2	2,0	2,43	3,03
1 prm ogrevnog drveta metarskog	0,7	1	0,8	1,4	1,7	2,1
1 prm ogrevnog cepanog drveta složenog	0,85	1,2	1	1,7		
1 nm^3 (nasipni metar) ogrevnog cepanog drveta u nasutom stanju	0,5	0,7	0,6	1		
1 nm^3 drvne sečke finoće G30	0,41	0,59			1	1,2
1 nm^3 drvne sečke finoće G50	0,33	0,48			0,8	1

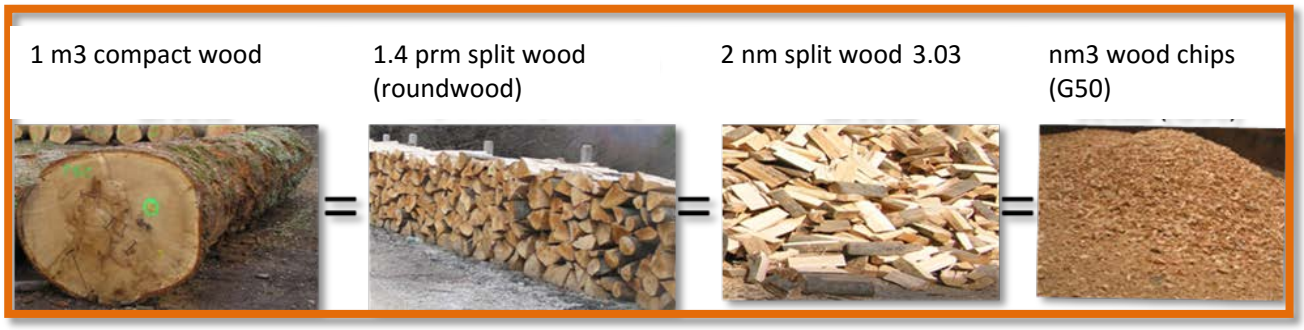
Izvor: Glavonjić B. 2012



Units of measurement for individual types of wood fuel and calculation coefficients used

ASSORTMENTS	COMPACT WOOD (SOLID WOOD)	FIREWOOD BY METER	FIREWOOD SPLIT		WOOD CHIPS	
			Stacked	Loose	Dimension G30	Dimension G50
	m^3	prm	prm	nm^3	nm^3	nm^3
1 m^3 of compact wood	1	1.43	1.2	2.0	2.43	3.03
1 prm firewood by meter	0.7	1	0.8	1.4	1.7	2.1
1 prm firewood split stacked	0.85	1.2	1	1.7		
1 nm3 loose of split firewood in bulk	0.5	0.7	0.6	1		
1 nm2 wood chips G30	0.41	0.59			1	1.2
1 nm2 wood chips G50	0.33	0.48			0.8	1

The example of using coefficients for conversion of units of measurement for different types of wood assortment products into m3 of solid wood (source: Glavonjić B. 2012):



4.1.6 Overview of abbreviations used for different parameters relevant to defining the trading codes

For the purpose of defining the trading codes for products covered by this Catalogue the following abbreviations have been used (based on above described elements):

V. Abbreviations for different types of wood products (fuels)

PRODUCT TYPE	ABBREVIATION
Multi-meter roundwood	VM
Firewood by meter - split wood	CE
Firewood by meter - roundwood	OB
Firewood- split	CD
Wood chips	DS
Wood briquettes	DB
Wood pellets for commercial use	DPK
Wood pellets for industrial use	DPI
Sawdust	PI
Trimmings	OK
Logging residues	DO
Charcoal	DU
Bark	KO

VI. Abbreviation for tree types

GROUP NAME	ABBREVIATION
Deciduous trees	L
High-density deciduous tree wood	TL
Low-density deciduous tree wood	ML

Coniferous tree wood	CT
Mixed wood	ME

VII. Abbreviations for units of measurement

NAME OF UNIT OF MEASUREMENT	ABBREVIATION
Stacked cubic meter	PRM
Loose cubic meter	NM
Cubic meter	KM
Kilogram	KG

VIII. Abbreviations for wood moisture content

NAME OF UNIT OF MEASUREMENT	ABBREVIATION
Fresh cut wood	S
Forest dried wood	P
Air dried wood	VS
Technically dried wood	SU

Quality classes in the trading code are regulated by standard SRPS EN ISO 17225/1-5:2015, and the following characterizes relevant to trading of wood fuels within individual classes the mandatory are the dimensions and moisture.

4.2 Examples of forming the trading codes

On the basis of the above presented elements, the following text gives two examples of forming the trading code for randomly chosen wood biomass products.

Example 1. Producer of firewood by meter wishes to offer at the biomass exchange 60 prm of beech wood in form of split wood in quality class A2. The wood was air dried for about 7 months and its measured moisture content is 25%. Define the trading code by which the wood producer can present the product of above parameters in the biomass exchange?

The trading code for the above example includes:

First digit:	product type	Firewood split (**CE**)
Second digit:	tree type	High-density deciduous tree wood (**TL**)
Third digit:	quality class according to SRPS EN ISO 17225-5 standard **A2**	
Fourth digit:	moisture level	**M25** (moisture of ≤ 25%)
Fifth digit:	unit of measurement	Stacked cubic meter (**PRM**)

Trading code for Example 1 would be: **CE_TL_A2_M25_PRM**

Example 2. Producer of wood chips produced of coniferous wood wants to offer at the biomass exchange a quantity of 400 loose cubic meters. The size of particles of the main fraction is in the range of 3.15 mm < *P* ≤ 3.15 mm. the moisture content of wood chips is 35%. The said parameters correspond to quality class A2. Define the trading code by which the wood producer can present the product of above parameters in the biomass exchange?

The trading code for the above example includes:

First digit:	product type	Wood chips (**DS**)
Second digit:	tree type	Coniferous tree wood (**CT**)
Third digit:	quality class according to SRPS EN ISO 17225-4 standard **A2**	
Fourth digit:	dimensions of pieces for the main fraction (according to standard SRPS EN ISO 17225-4) **P31S**	
Fifth digit:	moisture level	**M35** (moisture of ≤ 35%)
Sixth digit:	unit of measurement	Loose cubic meter (**NM**)

Trading code for Example 2 would be: **DS_CT_A2_P31S_M35_PRM**

Different types of wood fuels such as multi-meter roundwood for energy, sawdust, trimmings and logging residues have trading codes consisting of 4 digits (without denotations for quality class and dimensions).

The following text presents table overviews of trading codes with characteristics of all stated types of wood fuels.

5 TRADING CODES FOR DIFFERENT TYPES OF BIOMASS PRODUCTS

5.1 Trading code for multi-meter roundwood for energy

GENERIC CODE	VM (Milti-meter roundwood for energy)

Product type	Trading code	Type of wood	Moisture	Unit of measurement		Appearance
VM_001	VM_TL_S_KM	High-density deciduous tree wood	Fresh cut wood	Cubic meter	Above 1.0 m	
VM_002	VM_ML_S_KM	Low-density deciduous tree wood	Fresh cut wood	Cubic meter	Above 1.0 m	
VM_003	VM_CT_S_KM	Coniferous tree wood	Fresh cut wood	Cubic meter	Above 1.0 m	
VM_004	VM_ME_S_KM	Mixed wood	Fresh cut wood	Cubic meter	Above 1.0 m	
VM_005	VM_TL_P_KM	High-density deciduous tree wood	Forest dried wood	Cubic meter	Above 1.0 m	
VM_006	VM_ML_P_KM	Low-density deciduous tree wood	Forest dried wood	Cubic meter	Above 1.0 m	
VM_007	VM_CT_P_KM	Coniferous tree wood	Forest dried wood	Cubic meter	Above 1.0 m	
VM_008	VM_ME_P_KM	Mixed wood	Forest dried wood	Cubic meter	Above 1.0 m	

Multi-meter roundwood fore energy is roundwood which by its characteristics does not meet the criteria for timer wood processing, production of veneer and other wood products requiring certain quality.

5.2 Trading code for firewood by meter, split

GENERIC CODE	CE (Firewood by meter - split wood)

Product type	Trading code	Type of wood	Quality class	Moisture as received (%)	Unit of measurement	Length u cm	Appearance
CE_001	CE_TL_A1_M20_PRM	High-density deciduous tree wood	A1	M20 ≤ 20	Stacked cubic meter	L100 ≤ 100 (±5 cm)	
CE_002	CE_TL_A1_M25_PRM	High-density deciduous tree wood	A1	M25 ≤ 25	Stacked cubic meter	L100 ≤ 100 (±5 cm)	
CE_003	CE_TL_A2_M20_PRM	High-density deciduous tree wood	A2	M20 ≤ 20	Stacked cubic meter	L100 ≤ 100 (±5 cm)	
CE_004	CE_TL_A2_M25_PRM	High-density deciduous tree wood	A2	M25 ≤ 25	Stacked cubic meter	L100 ≤ 100 (±5 cm)	
CE_005	CE_TL_B_M20_PRM	High-density deciduous tree wood	B	M20 ≤ 20	Stacked cubic meter	L100 ≤ 100 (±5 cm)	
CE_006	CE_TL_B_M25_PRM	High-density deciduous tree wood	B	M25 ≤ 25	Stacked cubic meter	L100 ≤ 100 (±5 cm)	
CE_007	CE_TL_B_M35_PRM	High-density deciduous tree wood	B	M35 ≤ 35	Stacked cubic meter	L100 ≤ 100 (±5 cm)	
CE_008	CE_ML_A1_M20_PRM	Low-density deciduous tree wood	A1	M20 ≤ 20	Stacked cubic meter	L100 ≤ 100 (±5 cm)	
CE_009	CE_ML_A1_M25_PRM	Low-density deciduous tree wood	A1	M25 ≤ 25	Stacked cubic meter	L100 ≤ 100 (±5 cm)	
CE_010	CE_ML_A2_M20_PRM	Low-density deciduous tree wood	A2	M20 ≤ 20	Stacked cubic meter	L100 ≤ 100 (±5 cm)	
CE_011	CE_ML_A2_M25_PRM	Low-density deciduous tree wood	A2	M25 ≤ 25	Stacked cubic meter	L100 ≤ 100 (±5 cm)	
CE_012	CE_ML_B_M20_PRM	Low-density deciduous tree wood	B	M20 ≤ 20	Stacked cubic meter	L100 ≤ 100 (±5 cm)	
CE_013	CE_ML_B_M25_PRM	Low-density deciduous tree	B	M25 ≤ 25	Stacked cubic	L100 ≤ 100 (±5 cm)	

		wood			meter	
CE_014	CE_ML_B_M35_PRM	Low-density deciduous tree wood	B	M35 ≤ 35	Stacked cubic meter	L100 ≤ 100 (±5 cm)
CE_015	CE_CT_A1_M20_PRM	Coniferous tree wood	A1	M20 ≤ 20	Stacked cubic meter	L100 ≤ 100 (±5 cm)
CE_016	CE_CT_A1_M25_PRM	Coniferous tree wood	A1	M25 ≤ 25	Stacked cubic meter	L100 ≤ 100 (±5 cm)
CE_017	CE_CT_A2_M20_PRM	Coniferous tree wood	A2	M20 ≤ 20	Stacked cubic meter	L100 ≤ 100 (±5 cm)
CE_018	CE_CT_A2_M25_PRM	Coniferous tree wood	A2	M25 ≤ 25	Stacked cubic meter	L100 ≤ 100 (±5 cm)
CE_019	CE_CT_B_M20_PRM	Coniferous tree wood	B	M20 ≤ 20	Stacked cubic meter	L100 ≤ 100 (±5 cm)
CE_020	CE_CT_B_M25_PRM	Coniferous tree wood	B	M25 ≤ 25	Stacked cubic meter	L100 ≤ 100 (±5 cm)
CE_021	CE_CT_B_M35_PRM	Coniferous tree wood	B	M35 ≤ 35	Stacked cubic meter	L100 ≤ 100 (±5 cm)
CE_022	CE_ME_A1_M20_PRM	Mixed wood	A1	M20 ≤ 20	Stacked cubic meter	L100 ≤ 100 (±5 cm)
CE_023	CE_ME_A1_M25_PRM	Mixed wood	A1	M25 ≤ 25	Stacked cubic meter	L100 ≤ 100 (±5 cm)
CE_024	CE_ME_A2_M20_PRM	Mixed wood	A2	M20 ≤ 20	Stacked cubic meter	L100 ≤ 100 (±5 cm)
CE_025	CE_ME_A2_M25_PRM	Mixed wood	A2	M25 ≤ 25	Stacked cubic meter	L100 ≤ 100 (±5 cm)
CE_026	CE_ME_B_M20_PRM	Mixed wood	B	M20 ≤ 20	Stacked cubic	L100 ≤ 100 (±5 cm)

					meter		
CE_027	CE_ME_B_M25_PRM	Mixed wood	B	M25 ≤ 25	Stacked cubic meter	L100 ≤ 100 (±5 cm)	
CE_028	CE_ME_B_M35_PRM	Mixed wood	B	M35 ≤ 35	Stacked cubic meter	L100 ≤ 100 (±5 cm)	

Split wood are pieces of firewood of length of 1m cut at both sides by a saw. They are produced by splitting roundwood of diameter exceeding 15 cm.

Note: In special cases such as criss-cross stacking of split wood or when the wood pieces are very curvy, the equivalent net quantity of split wood can be expressed as stacked cubic meter whose height can be increased by maximum 20%.

5.3 Trading code for firewood by meter in form of roundwood

GENERIC CODE	OB (Firewood by meter - roundwood)

Product type	Trading name (Code)	Type of wood	Quality class	Moisture as received (%)	Unit of measurement	Length u cm	Appearance
OB_001	OB_TL_A1_M20_PRM	High-density deciduous tree wood	A1	M20 ≤ 20	Stacked cubic meter	L100 ≤ 100 (±5 cm)	
OB_002	OB_TL_A1_M25_PRM	High-density deciduous tree wood	A1	M25 ≤ 25	Stacked cubic meter	L100 ≤ 100 (±5 cm)	
OB_003	OB_TL_A2_M20_PRM	High-density deciduous tree wood	A2	M20 ≤ 20	Stacked cubic meter	L100 ≤ 100 (±5 cm)	
OB_004	OB_TL_A2_M25_PRM	High-density deciduous tree wood	A2	M25 ≤ 25	Stacked cubic meter	L100 ≤ 100 (±5 cm)	
OB_005	OB_TL_B_M20_PRM	High-density deciduous tree wood	B	M20 ≤ 20	Stacked cubic meter	L100 ≤ 100 (±5 cm)	
OB_006	OB_TL_B_M25_PRM	High-density deciduous tree wood	B	M25 ≤ 25	Stacked cubic meter	L100 ≤ 100 (±5 cm)	
OB_007	OB_TL_B_M35_PRM	High-density deciduous tree wood	B	M35 ≤ 35	Stacked cubic meter	L100 ≤ 100 (±5 cm)	
OB_008	OB_ML_A1_M20_PRM	Low-density deciduous tree wood	A1	M20 ≤ 20	Stacked cubic meter	L100 ≤ 100 (±5 cm)	
OB_009	OB_ML_A1_M25_PRM	Low-density deciduous tree wood	A1	M25 ≤ 25	Stacked cubic meter	L100 ≤ 100 (±5 cm)	
OB_010	OB_ML_A2_M20_PRM	Low-density deciduous tree wood	A2	M20 ≤ 20	Stacked cubic meter	L100 ≤ 100 (±5 cm)	
OB_011	OB_ML_A2_M25_PRM	Low-density deciduous tree wood	A2	M25 ≤ 25	Stacked cubic meter	L100 ≤ 100 (±5 cm)	
OB_012	OB_ML_B_M20_PRM	Low-density deciduous	B	M20 ≤ 20	Stacked cubic	L100 ≤ 100 (±5 cm)	

		tree wood			meter	
OB_013	OB_ML_B_M25_PRM	Low-density deciduous tree wood	B	M25 ≤ 25	Stacked cubic meter	L100 ≤ 100 (±5 cm)
OB_014	OB_ML_B_M35_PRM	Low-density deciduous tree wood	B	M35 ≤ 35	Stacked cubic meter	L100 ≤ 100 (±5 cm)
OB_015	OB_CT_A1_M20_PRM	Coniferous tree wood	A1	M20 ≤ 20	Stacked cubic meter	L100 ≤ 100 (±5 cm)
OB_016	OB_CT_A1_M25_PRM	Coniferous tree wood	A1	M25 ≤ 25	Stacked cubic meter	L100 ≤ 100 (±5 cm)
OB_017	OB_CT_A2_M20_PRM	Coniferous tree wood	A2	M20 ≤ 20	Stacked cubic meter	L100 ≤ 100 (±5 cm)
OB_018	OB_CT_A2_M25_PRM	Coniferous tree wood	A2	M25 ≤ 25	Stacked cubic meter	L100 ≤ 100 (±5 cm)
OB_019	OB_CT_B_M20_PRM	Coniferous tree wood	B	M20 ≤ 20	Stacked cubic meter	L100 ≤ 100 (±5 cm)
OB_020	OB_CT_B_M25_PRM	Coniferous tree wood	B	M25 ≤ 25	Stacked cubic meter	L100 ≤ 100 (±5 cm)
OB_021	OB_CT_B_M35_PRM	Coniferous tree wood	B	M35 ≤ 35	Stacked cubic meter	L100 ≤ 100 (±5 cm)
OB_022	OB_ME_A1_M20_PRM	Mixed wood	A1	M20 ≤ 20	Stacked cubic meter	L100 ≤ 100 (±5 cm)
OB_023	OB_ME_A1_M25_PRM	Mixed wood	A1	M25 ≤ 25	Stacked cubic meter	L100 ≤ 100 (±5 cm)
OB_024	OB_ME_A2_M20_PRM	Mixed wood	A2	M20 ≤ 20	Stacked cubic meter	L100 ≤ 100 (±5 cm)
OB_025	OB_ME_A2_M25_PRM	Mixed wood	A2	M25 ≤ 25	Stacked cubic meter	L100 ≤ 100 (±5 cm)
OB_026	OB_ME_B_M20_PRM	Mixed wood	B	M20 ≤ 20	Stacked cubic meter	L100 ≤ 100 (±5 cm)
OB_027	OB_ME_B_M25_PRM	Mixed wood	B	M25 ≤ 25	Stacked cubic	L100 ≤ 100 (±5 cm)

					meter		
OB_028	OB_ME_B_M35_PRM	Mixed wood	B	M35 ≤ 35	Stacked cubic meter	L100 ≤ 100 (±5 cm)	

Roundwood are pieces of firewood of length of 1 m with diameter from 7-25 cm. they are produced from roundwood cut by saws.

Note: In special cases such as criss-cross stacking of roundwood or when the wood pieces are very curvy, the equivalent net quantity of round wood can be expressed as stacked cubic meter whose height can be increased by maximum 20%.

5.4 Trading code for firewood split

GENERIC CODE	CD (Firewood split)

Product type	Trading name (Code)	Type of wood	Quality class	Moisture as received (%)	Length u cm	Unit of measurement	Appearance
CD_001	CD_TL_A1_M20_L20-40_PRM	High-density deciduous tree wood	A1	M20 ≤ 20	L20-40 (20, 25, 30, 33, 40) (±2 cm)	Stacked cubic meter	
CD_002	CD_TL_A1_M20_L50_PRM	High-density deciduous tree wood	A1	M20 ≤ 20	L50 50 (±4 cm)	Stacked cubic meter	
CD_003	CD_TL_A1_M25_L20-40_PRM	High-density deciduous tree wood	A1	M25 ≤ 25	L20-40 20, 25, 30, 33, 40) (±2 cm)	Stacked cubic meter	
CD_004	CD_TL_A1_M25_L50_PRM	High-density deciduous tree wood	A1	M25 ≤ 25	L50 50 (±4 cm)	Stacked cubic meter	
CD_005	CD_TL_A2_M20_L20-40_PRM	High-density deciduous tree wood	A2	M20 ≤ 20	L20-40 (20, 25, 30, 33, 40) (±2 cm)	Stacked cubic meter	
CD_006	CD_TL_A2_M20_L50_PRM	High-density deciduous tree wood	A2	M20 ≤ 20	L50 50 (±4 cm)	Stacked cubic meter	
CD_007	CD_TL_A2_M25_L20-40_PRM	High-density deciduous tree wood	A2	M25 ≤ 25	L20-40 (20, 25, 30, 33, 40) (±2 cm)	Stacked cubic meter	
CD_008	CD_TL_A2_M25_L50_PRM	High-density deciduous tree wood	A2	M25 ≤ 25	L50 50 (±4 cm)	Stacked cubic meter	
CD_009	CD_TL_B_M20_L30-40_PRM	High-density deciduous tree wood	B	M20 ≤ 20	L30-40 (30, 33, 40) (±2 cm)	Stacked cubic meter	
CD_010	CD_TL_B_M20_L50_PRM	High-density deciduous tree wood	B	M20 ≤ 20	L50 50 (±4 cm)	Stacked cubic meter	
CD_011	CD_TL_B_M25_L30-40_PRM	High-density deciduous tree wood	B	M25 ≤ 25	L30-40 (30, 33, 40) (±2 cm)	Stacked cubic meter	

CD_012	CD_TL_B_M25_L50_PRM	High-density deciduous tree wood	B	M25 ≤ 25	L50 50 (±4 cm)	Stacked cubic meter	
CD_013	CD_TL_B_M35_L30-40_PRM	High-density deciduous tree wood	B	M35 ≤ 35	L30-40 (30, 33, 40) (±2 cm)	Stacked cubic meter	
CD_014	CD_TL_B_M35_L50_PRM	High-density deciduous tree wood	B	M35 ≤ 35	L50 50 (±4 cm)	Stacked cubic meter	
CD_015	CD_ML_A1_M20_L20-40_PRM	Low-density deciduous tree wood	A1	M20 ≤ 20	L20-40 (20, 25, 30, 33, 40) (±2 cm)	Stacked cubic meter	
CD_016	CD_ML_A1_M20_L50_PRM	Low-density deciduous tree wood	A1	M20 ≤ 20	L50 50 (±4 cm)	Stacked cubic meter	
CD_017	CD_ML_A1_M25_L20-40_PRM	Low-density deciduous tree wood	A1	M25 ≤ 25	L20-40 (20, 25, 30, 33, 40) (±2 cm)	Stacked cubic meter	
CD_018	CD_ML_A1_M25_L50_PRM	Low-density deciduous tree wood	A1	M25 ≤ 25	L50 50 (±4 cm)	Stacked cubic meter	
CD_019	CD_ML_A2_M20_L20-40_PRM	Low-density deciduous tree wood	A2	M20 ≤ 20	L20-40 (20, 25, 30, 33, 40) (±2 cm)	Stacked cubic meter	
CD_020	CD_ML_A2_M20_L50_PRM	Low-density deciduous tree wood	A2	M20 ≤ 20	L50 50 (±4 cm)	Stacked cubic meter	
CD_021	CD_ML_A2_M25_L20-40_PRM	Low-density deciduous tree wood	A2	M25 ≤ 25	L20-40 (20, 25,30,33, 40) (±2 cm)	Stacked cubic meter	
CD_022	CD_ML_A2_M25_L50_PRM	Low-density deciduous tree wood	A2	M25 ≤ 25	L50 50 (±4 cm)	Stacked cubic meter	
CD_023	CD_ML_B_M20_L30-40_PRM	Low-density deciduous tree wood	B	M20 ≤ 20	L30-40 (30, 33, 40) (±2 cm)	Stacked cubic meter	
CD_024	CD_ML_B_M20_L50_PRM	Low-density deciduous tree wood	B	M20 ≤ 20	L50 50 (±4 cm)	Stacked cubic meter	
CD_025	CD_ML_B_M25_L30-40_PRM	Low-density deciduous tree wood	B	M25 ≤ 25	L30-40 (30, 33, 40) (±2 cm)	Stacked cubic meter	

CD_026	CD_ML_B_M25_L50_PRM	Low-density deciduous tree wood	B	M25 ≤ 25	L50 50 (±4 cm)	Stacked cubic meter	
CD_027	CD_ML_B_M35_L30-40_PRM	Low-density deciduous tree wood	B	M35 ≤ 35	L30-40 (30, 33, 40) (±2 cm)	Stacked cubic meter	
CD_028	CD_ML_B_M35_L50_PRM	Low-density deciduous tree wood	B	M35 ≤ 35	L50 50 (±4 cm)	Stacked cubic meter	
CD_029	CD_CT_A1_M20_L20-40_PRM	Coniferous tree wood	A1	M20 ≤ 20	L20-40 (20, 25, 30, 33, 40) (±2 cm)	Stacked cubic meter	
CD_030	CD_CT_A1_M20_L50_PRM	Coniferous tree wood	A1	M20 ≤ 20	L50 50 (±4 cm)	Stacked cubic meter	
CD_031	CD_CT_A1_M25_L20-40_PRM	Coniferous tree wood	A1	M25 ≤ 25	L20-40 (20, 25, 30, 33, 40) (±2 cm)	Stacked cubic meter	
CD_032	CD_CT_A1_M25_L50_PRM	Coniferous tree wood	A1	M25 ≤ 25	L50 50 (±4 cm)	Stacked cubic meter	
CD_033	CD_CT_A2_M20_L20-40_PRM	Coniferous tree wood	A2	M20 ≤ 20	L20-40 (20, 25, 30, 33, 40) (±2 cm)	Stacked cubic meter	
CD_034	CD_CT_A2_M20_L50_PRM	Coniferous tree wood	A2	M20 ≤ 20	L50 50 (±4 cm)	Stacked cubic meter	
CD_035	CD_CT_A2_M25_L20-40_PRM	Coniferous tree wood	A2	M25 ≤ 25	L20-40 (20, 25, 30, 33, 40) (±2 cm)	Stacked cubic meter	
CD_036	CD_CT_A2_M25_L50_PRM	Coniferous tree wood	A2	M25 ≤ 25	L50 50 (±4 cm)	Stacked cubic meter	
CD_037	CD_CT_B_M20_L30-40_PRM	Coniferous tree wood	B	M20 ≤ 20	L30-40 (30, 33, 40) (±2 cm)	Stacked cubic meter	
CD_038	CD_CT_B_M20_L50_PRM	Coniferous tree wood	B	M20 ≤ 20	L50 50 (±4 cm)	Stacked cubic meter	
CD_039	CD_CT_B_M25_L30-40_PRM	Coniferous tree wood	B	M25 ≤ 25	L30-40 (30, 33, 40) (±2 cm)	Stacked cubic meter	

CD_040	CD_CT_B_M25_L50_PRM	Coniferous tree wood	B	M25 ≤ 25	L50 50 (±4 cm)	Stacked cubic meter
CD_041	CD_CT_B_M35_L30-40_PRM	Coniferous tree wood	B	M35 ≤ 35	L30-40 (30, 33, 40) (±2 cm)	Stacked cubic meter
CD_042	CD_CT_B_M35_L50_PRM	Coniferous tree wood	B	M35 ≤ 35	L50 50 (±4 cm)	Stacked cubic meter
CD_043	CD_ME_A1_M20_L20-40_PRM	Mixed wood	A1	M20 ≤ 20	L20-40 (20, 25, 30, 33, 40) (±2 cm)	Stacked cubic meter
CD_044	CD_ME_A1_M20_L50_PRM	Mixed wood	A1	M20 ≤ 20	L50 50 (±4 cm)	Stacked cubic meter
CD_045	CD_ME_A1_M25_L20-40_PRM	Mixed wood	A1	M25 ≤ 25	L20-40 (20, 25, 30, 33, 40) (±2 cm)	Stacked cubic meter
CD_046	CD_ME_A1_M25_L50_PRM	Mixed wood	A1	M25 ≤ 25	L50 50 (±4 cm)	Stacked cubic meter
CD_047	CD_ME_A2_M20_L20-40_PRM	Mixed wood	A2	M20 ≤ 20	L20-40 (20, 25, 30, 33, 40) (±2 cm)	Stacked cubic meter
CD_048	CD_ME_A2_M20_L50_PRM	Mixed wood	A2	M20 ≤ 20	L50 50 (±4 cm)	Stacked cubic meter
CD_049	CD_ME_A2_M25_L20-40_PRM	Mixed wood	A2	M25 ≤ 25	L20-40 (20, 25, 30, 33, 40) (±2 cm)	Stacked cubic meter
CD_050	CD_ME_A2_M25_L50_PRM	Mixed wood	A2	M25 ≤ 25	L50 50 (±4 cm)	Stacked cubic meter
CD_051	CD_ME_B_M20_L30-40_PRM	Mixed wood	B	M20 ≤ 20	L30-40 (30, 33, 40) (±2 cm)	Stacked cubic meter
CD_052	CD_ME_B_M20_L50_PRM	Mixed wood	B	M20 ≤ 20	L50 50 (±4 cm)	Stacked cubic meter
CD_053	CD_ME_B_M25_L30-40_PRM	Mixed wood	B	M25 ≤ 25	L30-40 (30, 33, 40) (±2 cm)	Stacked cubic meter

CD_054	CD_ME_B_M25_L50_PRM	Mixed wood	B	M25 ≤ 25	L50 50 (±4 cm)	Stacked cubic meter	
CD_055	CD_ME_B_M35_L30-40_PRM	Mixed wood	B	M35 ≤ 35	L30-40 (30, 33, 40) (±2 cm)	Stacked cubic meter	
CD_056	CD_ME_B_M35_L50_PRM	Mixed wood	B	M35 ≤ 35	L50 50 (±4 cm)	Stacked cubic meter	

Firewood split is a traditional form of wood fuel of lengths of 20-50 cm, produced by shortening of splitting of roundwood (1 m) or split wood (1 m).

5.5 Trading code for wood chips

GENERIC CODE	DS (Wood chips)

Product type	Trading name (Code)	Type of wood	Quality class	Particle size of key fraction (min 60% of total volume)	Moisture as received (%)	Unit of measurement	Appearance
DS_001	DS_TL_A1_M10_P16S_NM	High-density deciduous tree wood	A1	P16S	M10 ≤ 10	Loose cubic meter	
DS_002	DS_TL_A1_M10_P31S_NM	High-density deciduous tree wood		P31S	M10 ≤ 10	Loose cubic meter	
DS_003	DS_TL_A1_M10_P45S_NM	High-density deciduous tree wood		P45S	M10 ≤ 10	Loose cubic meter	
DS_004	DS_TL_A1_M25_P16S_NM	High-density deciduous tree wood		P16S	M25 ≤ 25	Loose cubic meter	
DS_005	DS_TL_A1_M25_P31S_NM	High-density deciduous tree wood		P31S	M25 ≤ 25	Loose cubic meter	
DS_006	DS_TL_A1_M25_P45S_NM	High-density deciduous tree wood		P45S	M25 ≤ 25	Loose cubic meter	
DS_007	DS_TL_A2_M35_P16S_NM	High-density deciduous tree wood	A2	P16S	M35 ≤ 35	Loose cubic meter	
DS_008	DS_TL_A2_M35_P31S_NM	High-density deciduous tree wood		P31S	M35 ≤ 35	Loose cubic meter	
DS_009	DS_TL_A2_M35_P45S_NM	High-density deciduous tree wood		P45S	M35 ≤ 35	Loose cubic meter	
DS_010	DS_TL_B1_P16S_NM	High-density deciduous tree wood	B1	P16S	Maximum value to be stated	Loose cubic meter	
DS_011	DS_TL_B1_P31S_NM	High-density deciduous tree wood		P31S		Loose cubic meter	
DS_012	DS_TL_B1_P45S_NM	High-density		P45S		Loose cubic meter	

		deciduous tree wood					
DS_013	DS_TL_B2_P16S_NM	High-density deciduous tree wood	B2	P16S	Maximum value to be stated	Loose cubic meter	
DS_014	DS_TL_B2_P31S_NM	High-density deciduous tree wood		P31S		Loose cubic meter	
DS_015	DS_TL_B2_P45S_NM	High-density deciduous tree wood		P45S		Loose cubic meter	
DS_016	DS_ML_A1_M10_P16S_NM	Low-density deciduous tree wood	A1	P16S	M10 ≤ 10	Loose cubic meter	
DS_017	DS_ML_A1_M10_P31S_NM	Low-density deciduous tree wood		P31S	M10 ≤ 10	Loose cubic meter	
DS_018	DS_ML_A1_M10_P45S_NM	Low-density deciduous tree wood		P45S	M10 ≤ 10	Loose cubic meter	
DS_019	DS_ML_A1_M25_P16S_NM	Low-density deciduous tree wood		P16S	M25 ≤ 25	Loose cubic meter	
DS_020	DS_ML_A1_M25_P31S_NM	Low-density deciduous tree wood		P31S	M25 ≤ 25	Loose cubic meter	
DS_021	DS_ML_A1_M25_P45S_NM	Low-density deciduous tree wood		P45S	M25 ≤ 25	Loose cubic meter	
DS_022	DS_ML_A2_M35_P16S_NM	Low-density deciduous tree wood	A2	P16S	M35 ≤ 35	Loose cubic meter	
DS_023	DS_ML_A2_M35_P31S_NM	Low-density deciduous tree wood		P31S	M35 ≤ 35	Loose cubic meter	
DS_024	DS_ML_A2_M35_P45S_NM	Low-density deciduous tree wood		P45S	M35 ≤ 35	Loose cubic meter	
DS_025	DS_ML_B1_P16S_NM	Low-density deciduous tree wood	B1	P16S	Maximum value to be stated	Loose cubic meter	
DS_026	DS_ML_B1_P31S_NM	Low-density deciduous tree wood		P31S		Loose cubic meter	
DS_027	DS_ML_B1_P45S_N	Low-density		P45S		Loose cubic meter	

	M	deciduous tree wood					
DS_028	DS_ML_B2_P16S_NM	Low-density deciduous tree wood	B2	P16S	Maximum value to be stated	Loose cubic meter	
DS_029	DS_ML_B2_P31S_NM	Low-density deciduous tree wood		P31S		Loose cubic meter	
DS_030	DS_ML_B2_P45S_NM	Low-density deciduous tree wood		P45S		Loose cubic meter	
DS_031	DS_CT_A1_M10_P16S_NM	Coniferous tree wood	A1	P16S	M10 ≤ 10	Loose cubic meter	
DS_032	DS_CT_A1_M10_P31S_NM	Coniferous tree wood		P31S	M10 ≤ 10	Loose cubic meter	
DS_033	DS_CT_A1_M10_P45S_NM	Coniferous tree wood		P45S	M10 ≤ 10	Loose cubic meter	
DS_034	DS_CT_A1_M25_P16S_NM	Coniferous tree wood		P16S	M25 ≤ 25	Loose cubic meter	
DS_035	DS_CT_A1_M25_P31S_NM	Coniferous tree wood		P31S	M25 ≤ 25	Loose cubic meter	
DS_036	DS_CT_A1_M25_P45S_NM	Coniferous tree wood		P45S	M25 ≤ 25	Loose cubic meter	
DS_037	DS_CT_A2_M35_P16S_NM	Coniferous tree wood	A2	P16S	M35 ≤ 35	Loose cubic meter	
DS_038	DS_CT_A2_M35_P31S_NM	Coniferous tree wood		P31S	M35 ≤ 35	Loose cubic meter	
DS_039	DS_CT_A2_M35_P45S_NM	Coniferous tree wood		P45S	M35 ≤ 35	Loose cubic meter	
DS_040	DS_CT_B1_P16S_NM	Coniferous tree wood	B1	P16S	Maximum value to be stated	Loose cubic meter	
DS_041	DS_CT_B1_P31S_NM	Coniferous tree wood		P31S		Loose cubic meter	
DS_042	DS_CT_B1_P45S_NM	Coniferous tree		P45S		Loose cubic meter	

		wood					
DS_043	DS_CT_B2_P16S_NM	Coniferous tree wood	B2	P16S	Maximum value to be stated	Loose cubic meter	
DS_044	DS_CT_B2_P31S_NM	Coniferous tree wood		P31S		Loose cubic meter	
DS_045	DS_CT_B2_P45S_NM	Coniferous tree wood		P45S		Loose cubic meter	
DS_046	DS_ME_A1_M10_P16S_NM	Mixed wood	A1	P16S	M10 ≤ 10	Loose cubic meter	
DS_047	DS_ME_A1_M10_P31S_NM	Mixed wood		P31S	M10 ≤ 10	Loose cubic meter	
DS_048	DS_ME_A1_M10_P45S_NM	Mixed wood		P45S	M10 ≤ 10	Loose cubic meter	
DS_049	DS_ME_A1_M25_P16S_NM	Mixed wood		P16S	M25 ≤ 25	Loose cubic meter	
DS_050	DS_ME_A1_M25_P31S_NM	Mixed wood		P31S	M25 ≤ 25	Loose cubic meter	
DS_051	DS_ME_A1_M25_P45S_NM	Mixed wood		P45S	M25 ≤ 25	Loose cubic meter	
DS_052	DS_ME_A2_M35_P16S_NM	Mixed wood	A2	P16S	M35 ≤ 35	Loose cubic meter	
DS_053	DS_ME_A2_M35_P31S_NM	Mixed wood		P31S	M35 ≤ 35	Loose cubic meter	
DS_054	DS_ME_A2_M35_P45S_NM	Mixed wood		P45S	M35 ≤ 35	Loose cubic meter	
DS_055	DS_ME_B1_P16S_NM	Mixed wood	B1	P16S	Maximum value to be stated	Loose cubic meter	
DS_056	DS_ME_B1_P31S_NM	Mixed wood		P31S		Loose cubic meter	
DS_057	DS_ME_B1_P45S_N	Mixed wood		P45S		Loose cubic meter	

	M						
DS_058	DS_ME_B2_P16S_NM	Mixed wood	B2	P16S	Maximum value to be stated	Loose cubic meter	
DS_059	DS_ME_B2_P31S_NM	Mixed wood		P31S			
DS_060	DS_ME_B2_P45S_NM	Mixed wood		P45S			

Wood chips is chipped wood fuel consisting of thee fractions: the key fraction (min 60% of total volume), fines, and big fraction. The share of individual fractions and the length of pieces are defined for each of the three particle sizes: P16S, P31S and P45S.

5.6 Trading code for wood pellets for commercial and residential use

GENERIC CODE	DPK (Wood pellets for commercial use)

Product type	Trading name (Code)	Type of wood	Quality class	Diameter, mm	Moisture as received (%)	Unit of measurement	Appearance
DPK_001	DPK_TL_A1_D06_M10_KG	High-density deciduous tree wood	A1	D06 6 ± 1	M10 ≤ 10	kilogram	
DPK_002	DPK_TL_A1_D08_M10_KG	High-density deciduous tree wood		D08 8 ± 1	M10 ≤ 10	kilogram	
DPK_003	DPK_TL_A2_D06_M10_KG	High-density deciduous tree wood	A2	D06 6 ± 1	M10 ≤ 10	kilogram	
DPK_004	DPK_TL_A2_D08_M10_KG	High-density deciduous tree wood		D08 8 ± 1	M10 ≤ 10	kilogram	
DPK_005	DPK_TL_B_D06_M10_KG	High-density deciduous tree wood	B	D06 6 ± 1	M10 ≤ 10	kilogram	

DPK_006	DPK_TL_B_D08_M10_KG	High-density deciduous tree wood		D08 8 ± 1	M10 ≤ 10	kilogram	
DPK_007	DPK_ML_A1_D06_M10_KG	Low-density deciduous tree wood	A1	D06 6 ± 1	M10 ≤ 10	kilogram	
DPK_008	DPK_ML_A1_D08_M10_KG	Low-density deciduous tree wood		D08 8 ± 1	M10 ≤ 10	kilogram	
DPK_009	DPK_ML_A2_D06_M10_KG	Low-density deciduous tree wood	A2	D06 6 ± 1	M10 ≤ 10	kilogram	
DPK_010	DPK_ML_A2_D08_M10_KG	Low-density deciduous tree wood		D08 8 ± 1	M10 ≤ 10	kilogram	
DPK_011	DPK_ML_B_D06_M10_KG	Low-density deciduous tree wood	B	D06 6 ± 1	M10 ≤ 10	kilogram	
DPK_012	DPK_ML_B_D08_M10_KG	Low-density deciduous tree wood		D08 8 ± 1	M10 ≤ 10	kilogram	
DPK_013	DPK_CT_A1_D06_M10_KG	Coniferous tree wood	A1	D06 6 ± 1	M10 ≤ 10	kilogram	
DPK_014	DPK_CT_A1_D08_M10_KG	Coniferous tree wood		D08 8 ± 1	M10 ≤ 10	kilogram	
DPK_015	DPK_CT_A2_D06_M10_KG	Coniferous tree wood	A2	D06 6 ± 1	M10 ≤ 10	kilogram	
DPK_016	DPK_CT_A2_D08_M10_KG	Coniferous tree wood		D08 8 ± 1	M10 ≤ 10	kilogram	
DPK_017	DPK_CT_B_D06_M10_KG	Coniferous tree wood	B	D06 6 ± 1	M10 ≤ 10	kilogram	
DPK_018	DPK_CT_B_D08_M10_KG	Coniferous tree wood		D08 8 ± 1	M10 ≤ 10	kilogram	
DPK_019	DPK_ME_A1_D06_M10_KG	Mixed wood	A1	D06 6 ± 1	M10 ≤ 10	kilogram	
DPK_020	DPK_ME_A1_D08_M10_KG	Mixed wood		D08 8 ± 1	M10 ≤ 10	kilogram	

DPK_021	DPK_ME_A2_D06_M10_KG	Mixed wood	A2	D06 6 ± 1	M10 ≤ 10	kilogram	
DPK_022	DPK_ME_A2_D08_M10_KG	Mixed wood		D08 8 ± 1	M10 ≤ 10	kilogram	
DPK_023	DPK_ME_B_D06_M10_KG	Mixed wood	B	D06 6 ± 1	M10 ≤ 10	kilogram	
DPK_024	DPK_ME_B_D08_M10_KG	Mixed wood		D08 8 ± 1	M10 ≤ 10	kilogram	

Wood pellets are refined and homogenized form of fuel produced from wood residues in wood processing or from other forms of wood biomass by their chopping to the level of wood flour and consequent compression in special presses.

5.7 Trading code for wood pellets for industrial use

GENERIC CODE	DPI (Wood pellets for industrial use)

Product type	Trading name (Code)	Type of wood	Quality class	Diameter, mm	Moisture as received (%)	Unit of measurement	Appearance
DPI_001	DPI_TL_I1_D06_M10_KG	High-density deciduous tree wood	I1	D06 6 ± 1	M10 ≤ 10	kilogram	
DPI_002	DPI_TL_I1_D08_M10_KG	High-density deciduous tree wood		D08 8 ± 1	M10 ≤ 10	kilogram	
DPI_003	DPI_TL_I2_D06_M10_KG	High-density deciduous tree wood	I2	D06 6 ± 1	M10 ≤ 10	kilogram	
DPI_004	DPI_TL_I2_D08_M10_KG	High-density deciduous tree wood		D08 8 ± 1	M10 ≤ 10	kilogram	
DPI_005	DPI_TL_I2_D10_M10_KG	High-density deciduous tree wood		D10 10 ± 1	M10 ≤ 10	kilogram	
DPI_006	DPI_TL_I3_D06_M10_KG	High-density deciduous tree wood	I3	D06 6 ± 1	M10 ≤ 10	kilogram	
DPI_007	DPI_TL_I3_D08_M10_KG	High-density deciduous tree wood		D08 8 ± 1	M10 ≤ 10	kilogram	
DPI_008	DPI_TL_I3_D10_M10_KG	High-density deciduous tree wood		D10 10 ± 1	M10 ≤ 10	kilogram	
DPI_009	DPI_TL_I3_D12_M10_KG	High-density deciduous tree wood		D12 12 ± 1	M10 ≤ 10	kilogram	
DPI_010	DPI_ML_I1_D06_M10_KG	Low-density deciduous tree wood	I1	D06 6 ± 1	M10 ≤ 10	kilogram	
DPI_011	DPI_ML_I1_D08_M10_KG	Low-density deciduous tree wood		D08 8 ± 1	M10 ≤ 10	kilogram	
DPI_012	DPI_ML_I2_D06_M10_KG	Low-density deciduous tree wood	I2	D06 6 ± 1	M10 ≤ 10	kilogram	

DPI_013	DPI_ML_I2_D08_M10_KG	Low-density deciduous tree wood		D08 8 ± 1	M10 ≤ 10	kilogram	
DPI_014	DPI_ML_I2_D10_M10_KG	Low-density deciduous tree wood		D10 10 ± 1	M10 ≤ 10	kilogram	
DPI_015	DPI_ML_I3_D06_M10_KG	Low-density deciduous tree wood	I3	D06 6 ± 1	M10 ≤ 10	kilogram	
DPI_016	DPI_ML_I3_D08_M10_KG	Low-density deciduous tree wood		D08 8 ± 1	M10 ≤ 10	kilogram	
DPI_017	DPI_ML_I3_D10_M10_KG	Low-density deciduous tree wood		D10 10 ± 1	M10 ≤ 10	kilogram	
DPI_018	DPI_ML_I3_D12_M10_KG	Low-density deciduous tree wood		D12 12 ± 1	M10 ≤ 10	kilogram	
DPI_019	DPI_CT_I1_D06_M10_KG	Coniferous tree wood	I1	D06 6 ± 1	M10 ≤ 10	kilogram	
DPI_020	DPI_CT_I1_D08_M10_KG	Coniferous tree wood		D08 8 ± 1	M10 ≤ 10	kilogram	
DPI_021	DPI_CT_I2_D06_M10_KG	Coniferous tree wood	I2	D06 6 ± 1	M10 ≤ 10	kilogram	
DPI_022	DPI_CT_I2_D08_M10_KG	Coniferous tree wood		D08 8 ± 1	M10 ≤ 10	kilogram	
DPI_023	DPI_CT_I2_D10_M10_KG	Coniferous tree wood		D10 10 ± 1	M10 ≤ 10	kilogram	
DPI_024	DPI_CT_I3_D06_M10_KG	Coniferous tree wood	I3	D06 6 ± 1	M10 ≤ 10	kilogram	
DPI_025	DPI_CT_I3_D08_M10_KG	Coniferous tree wood		D08 8 ± 1	M10 ≤ 10	kilogram	
DPI_026	DPI_CT_I3_D10_M10_KG	Coniferous tree wood		D10 10 ± 1	M10 ≤ 10	kilogram	
DPI_027	DPI_CT_I3_D12_M10_KG	Coniferous tree wood		D12 12 ± 1	M10 ≤ 10	kilogram	

DPI_028	DPI_ME_I1_D06_M10_KG	Mixed wood	I1	D06 6 ± 1	M10 ≤ 10	kilogram	
DPI_029	DPI_ME_I1_D08_M10_KG	Mixed wood		D08 8 ± 1	M10 ≤ 10	kilogram	
DPI_030	DPI_ME_I2_D06_M10_KG	Mixed wood	I2	D06 6 ± 1	M10 ≤ 10	kilogram	
DPI_031	DPI_ME_I2_D08_M10_KG	Mixed wood		D08 8 ± 1	M10 ≤ 10	kilogram	
DPI_032	DPI_ME_I2_D10_M10_KG	Mixed wood		D10 10 ± 1	M10 ≤ 10	kilogram	
DPI_033	DPI_ME_I3_D06_M10_KG	Mixed wood	I3	D06 6 ± 1	M10 ≤ 10	kilogram	
DPI_034	DPI_ME_I3_D08_M10_KG	Mixed wood		D08 8 ± 1	M10 ≤ 10	kilogram	
DPI_035	DPI_ME_I3_D10_M10_KG	Mixed wood		D10 10 ± 1	M10 ≤ 10	kilogram	
DPI_036	DPI_ME_I3_D12_M10_KG	Mixed wood		D12 12 ± 1	M10 ≤ 10	kilogram	

5.8 Trading code for wood briquettes

GENERIC CODE	DB (Wood briquettes)

Product type	Trading name (Code)	Type of wood	Quality class	Moisture as received (%)	Dimensions u mm	Unit of measurement	Appearance
DB_001	DB_TL_A1_M12_KG	High-density deciduous tree wood	A1	M12 ≤ 12	State the form and: 1. Diameter and length for cylindrical forms; 2. Length, width and height for other forms.	kilogram	
DB_002	DB_TL_A2_M15_KG	High-density deciduous tree wood	A2	M15 ≤ 15		kilogram	
DB_003	DB_TL_B_M15_KG	High-density deciduous tree wood	B	M15 ≤ 15		kilogram	
DB_004	DB_ML_A1_M12_KG	Low-density deciduous tree wood	A1	M12 ≤ 12		kilogram	
DB_005	DB_ML_A2_M15_KG	Low-density deciduous tree wood	A2	M15 ≤ 15		kilogram	
DB_006	DB_ML_B_M15_KG	Low-density deciduous tree wood	B	M15 ≤ 15		kilogram	
DB_007	DB_CT_A1_M12_KG	Coniferous tree wood	A1	M12 ≤ 12		kilogram	
DB_008	DB_CT_A2_M15_KG	Coniferous tree wood	A2	M15 ≤ 15		kilogram	
DB_009	DB_CT_B_M15_KG	Coniferous tree wood	B	M15 ≤ 15		kilogram	
DB_010	DB_ME_A1_M12_KG	Mixed wood	A1	M12 ≤ 12		kilogram	
DB_011	DB_ME_A2_M15_KG	Mixed wood	A2	M15 ≤ 15		kilogram	
DB_012	DB_ME_B_M15_KG	Mixed wood	B	M15 ≤ 15		kilogram	

Wood briquettes are compact forms of wood fuel produced by physical compression of chopped wood material in special presses (mechanical or hydraulic).

5.9 Trading code for wood sawdust

GENERIC CODE	PI (Sawdust)

Product type	Trading name (Code)	Type of wood	Moisture		Appearance
PI_001	PI_TL_S_KG	High-density deciduous tree wood	Fresh cut wood	Kilogram	
PI_002	PI_TL_P_KG	High-density deciduous tree wood	Forest dried wood	Kilogram	
PI_003	PI_TL_VS_KG	High-density deciduous tree wood	Air dried wood	Kilogram	
PI_004	PI_TL_SU_KG	High-density deciduous tree wood	Technically dried wood	Kilogram	
PI_005	PI_ML_S_KG	Low-density deciduous tree wood	Fresh cut wood	Kilogram	
PI_006	PI_ML_P_KG	Low-density deciduous tree wood	Forest dried wood	Kilogram	
PI_007	PI_ML_VS_KG	Low-density deciduous tree wood	Air dried wood	Kilogram	
PI_008	PI_ML_SU_KG	Low-density deciduous tree wood	Technically dried wood	Kilogram	
PI_009	PI_CT_S_KG	Coniferous tree wood	Fresh cut wood	Kilogram	
PI_010	PI_CT_P_KG	Coniferous tree wood	Forest dried wood	Kilogram	
PI_011	PI_CT_VS_KG	Coniferous tree wood	Air dried wood	Kilogram	
PI_012	PI_CT_SU_KG	Coniferous tree wood	Technically dried	Kilogram	

			wood	
PI_013	PI_ME_S_KG	Mixed wood	Fresh cut wood	Kilogram
PI_014	PI_ME_P_KG	Mixed wood	Forest dried wood	Kilogram
PI_015	PI_ME_VS_KG	Mixed wood	Air dried wood	Kilogram
PI_016	PI_ME_SU_KG	Mixed wood	Technically dried wood	Kilogram
PI_017	PI_TL_S_NM	High-density deciduous tree wood	Fresh cut wood	Loose cubic meter
PI_018	PI_TL_P_NM	High-density deciduous tree wood	Forest dried wood	Loose cubic meter
PI_019	PI_TL_VS_NM	High-density deciduous tree wood	Air dried wood	Loose cubic meter
PI_020	PI_TL_SU_NM	High-density deciduous tree wood	Technically dried wood	Loose cubic meter
PI_021	PI_ML_S_NM	Low-density deciduous tree wood	Fresh cut wood	Loose cubic meter
PI_022	PI_ML_P_NM	Low-density deciduous tree wood	Forest dried wood	Loose cubic meter
PI_023	PI_ML_VS_NM	Low-density deciduous tree wood	Air dried wood	Loose cubic meter
PI_024	PI_ML_SU_NM	Low-density deciduous tree wood	Technically dried wood	Loose cubic meter
PI_025	PI_CT_S_NM	Coniferous tree wood	Fresh cut wood	Loose cubic meter
PI_026	PI_CT_P_NM	Coniferous tree wood	Forest dried wood	Loose cubic meter
PI_027	PI_CT_VS_NM	Coniferous tree wood	Air dried wood	Loose cubic meter

PI_028	PI_CT_SU_NM	Coniferous tree wood	Technically dried wood	Loose cubic meter	
PI_029	PI_ME_S_NM	Mixed wood	Fresh cut wood	Loose cubic meter	
PI_030	PI_ME_P_NM	Mixed wood	Forest dried wood	Loose cubic meter	
PI_031	PI_ME_VS_NM	Mixed wood	Air dried wood	Loose cubic meter	
PI_032	PI_ME_SU_NM	Mixed wood	Technically dried wood	Loose cubic meter	

The code for sawdust includes also other fine wood particles such as wood fine sawing residues from wood processing plants.

5.10 Trading code for trimmings

GENERIC CODE	OK (Trimmings)

Product type	Trading name (Code)	Type of wood	Moisture	Dimensions	Unit of measurement	Appearance
OK_001	OK_TL_S_PM	High-density deciduous tree wood	Fresh cut wood		Stacked cubic meter	
OK_002	OK_ML_S_PM	Low-density deciduous tree wood	Fresh cut wood		Stacked cubic meter	
OK_003	OK_CT_S_PM	Coniferous tree wood	Fresh cut wood		Stacked cubic meter	
OK_004	OK_ME_S_PM	Mixed wood	Fresh cut wood		Stacked cubic meter	
OK_005	OK_TL_P_PM	High-density deciduous tree wood	Forest dried wood		Stacked cubic meter	
OK_006	OK_ML_P_PM	Low-density deciduous tree wood	Forest dried wood		Stacked cubic meter	
OK_007	OK_CT_P_PM	Coniferous tree wood	Forest dried wood		Stacked cubic meter	
OK_008	OK_ME_P_PM	Mixed wood	Forest dried wood		Stacked cubic meter	

Trimmings are different wood residues of different shapes and dimensions resulting as by-products from cutting roundwood.

5.11 Trading code for logging residues

GENERIC CODE	DO (Logging residues)

Product type	Trading name (Code)	Type of wood	Moisture	Unit of measurement	Appearance
DO_001	DO_TL_S_KG	High-density deciduous tree wood	Fresh cut wood	Kilogram	
DO_002	DO_TL_P_KG	High-density deciduous tree wood	Forest dried wood	Kilogram	
DO_003	DO_TL_VS_KG	High-density deciduous tree wood	Air dried wood	Kilogram	
DO_004	DO_TL_SU_KG	High-density deciduous tree wood	Technically dried wood	Kilogram	
DO_005	DO_ML_S_KG	Low-density deciduous tree wood	Fresh cut wood	Kilogram	
DO_006	DO_ML_P_KG	Low-density deciduous tree wood	Forest dried wood	Kilogram	
DO_007	DO_ML_VS_KG	Low-density deciduous tree wood	Air dried wood	Kilogram	
DO_008	DO_ML_SU_KG	Low-density deciduous tree wood	Technically dried wood	Kilogram	
DO_009	DO_CT_S_KG	Coniferous tree wood	Fresh cut wood	Kilogram	
DO_010	DO_CT_P_KG	Coniferous tree wood	Forest dried wood	Kilogram	
DO_011	DO_CT_VS_KG	Coniferous tree wood	Air dried wood	Kilogram	
DO_012	DO_CT_SU_KG	Coniferous tree wood	Technically dried wood	Kilogram	
DO_013	DO_ME_S_KG	Mixed wood	Fresh cut wood	Kilogram	

DO_014	DO_ME_P_KG	Mixed wood	Forest dried wood	Kilogram
DO_015	DO_ME_VS_KG	Mixed wood	Air dried wood	Kilogram
DO_016	DO_ME_SU_KG	Mixed wood	Technically dried wood	Kilogram
DO_017	DO_TL_S_NM	High-density deciduous tree wood	Fresh cut wood	Loose cubic meter
DO_018	DO_TL_P_NM	High-density deciduous tree wood	Forest dried wood	Loose cubic meter
DO_019	DO_TL_VS_NM	High-density deciduous tree wood	Air dried wood	Loose cubic meter
DO_020	DO_TL_SU_NM	High-density deciduous tree wood	Technically dried wood	Loose cubic meter
DO_021	DO_ML_S_NM	Low-density deciduous tree wood	Fresh cut wood	Loose cubic meter
DO_022	DO_ML_P_NM	Low-density deciduous tree wood	Forest dried wood	Loose cubic meter
DO_023	DO_ML_VS_NM	Low-density deciduous tree wood	Air dried wood	Loose cubic meter
DO_024	DO_ML_SU_NM	Low-density deciduous tree wood	Technically dried wood	Loose cubic meter
DO_025	DO_CT_S_NM	Coniferous tree wood	Fresh cut wood	Loose cubic meter
DO_026	DO_CT_P_NM	Coniferous tree wood	Forest dried wood	Loose cubic meter
DO_027	DO_CT_VS_NM	Coniferous tree wood	Air dried wood	Loose cubic meter
DO_028	DO_CT_SU_NM	Coniferous tree wood	Technically dried wood	Loose cubic meter
DO_029	DO_ME_S_NM	Mixed wood	Fresh cut wood	Loose cubic meter
DO_030	DO_ME_P_NM	Mixed wood	Forest dried wood	Loose cubic meter

DO_031	DO_ME_VS_NM	Mixed wood	Air dried wood	Loose cubic meter	
DO_032	DO_ME_SU_NM	Mixed wood	Technically dried wood	Loose cubic meter	

Logging residues include, predominantly, logging residues from mechanical wood processing (side trimmings, off cuts, side pieces, etc.) and residues from cutting logs.

5.12 Trading code for charcoal

GENERIC CODE	DU (Charcoal)

Product type	Trading name (Code)	Type of wood	Moisture as received (%)	Dimensions of main fraction 16 mm ≤ *P* ≤ 150 mm	Unit of measurement	Appearance
DU_001	DU_M8_P150_KG		M8 ≤ 8	P150	kilogram	
DU_002	DU_M10_P150_KG		M10 ≤ 10	P150	kilogram	

5.13 Trading code for bark

GENERIC CODE	KO (Bark)

Product type	Trading name (Code)	Type of wood	Moisture as received (%)	Dimensions	Unit of measurement	Appearance
KO_001	KO_L_M20_KG	Deciduous trees	M20 ≤ 20 %	P16, P45, P63, P100, P200	Kilogram	
KO_002	KO_L_M25_KG	Deciduous trees	M25 ≤ 25 %	P16, P45, P63, P100, P200	Kilogram	
KO_003	KO_L_M30_KG	Deciduous trees	M30 ≤ 30 %	P16, P45, P63, P100, P200	Kilogram	
KO_004	KO_L_M35_KG	Deciduous trees	M35 ≤ 35 %	P16, P45, P63, P100, P200	Kilogram	
KO_005	KO_L_M40_KG	Deciduous trees	M40 ≤ 40 %	P16, P45, P63, P100, P200	Kilogram	
KO_006	KO_L_M45_KG	Deciduous trees	M45 ≤ 45 %	P16, P45, P63, P100, P200	Kilogram	
KO_007	KO_L_M50_KG	Deciduous trees	M50 ≤ 50 %	P16, P45, P63, P100, P200	Kilogram	
KO_008	KO_L_M55_KG	Deciduous trees	M55 ≤ 55 %	P16, P45, P63, P100, P200	Kilogram	
KO_009	KO_L_M60_KG	Deciduous trees	M60 ≤ 60 %	P16, P45, P63, P100, P200	Kilogram	
KO_010	KO_L_M65_KG	Deciduous trees	M65 ≤ 65 %	P16, P45, P63, P100, P200	Kilogram	
KO_011	KO_CT_M65+_KG	Deciduous trees	M65+ >65 %	P16, P45, P63, P100, P200	Kilogram	
KO_012	KO_CT_M20_KG	Coniferous tree wood	M20 ≤ 20 %	P16, P45, P63, P100, P200	Kilogram	
KO_013	KO_CT_M25_KG	Coniferous tree wood	M25 ≤ 25 %	P16, P45, P63, P100, P200	Kilogram	
KO_014	KO_CT_M30_KG	Coniferous tree wood	M30 ≤ 30 %	P16, P45, P63, P100, P200	Kilogram	
KO_015	KO_CT_M35_KG	Coniferous tree wood	M35 ≤ 35 %	P16, P45, P63, P100, P200	Kilogram	
KO_016	KO_CT_M40_KG	Coniferous tree wood	M40 ≤ 40 %	P16, P45, P63, P100, P200	Kilogram	
KO_017	KO_CT_M45_KG	Coniferous tree wood	M45 ≤ 45 %	P16, P45, P63, P100, P200	Kilogram	
KO_018	KO_CT_M50_KG	Coniferous tree wood	M50 ≤ 50 %	P16, P45, P63, P100, P200	Kilogram	

KO_019	KO_CT_M55_KG	Coniferous tree wood	M55 ≤ 55 %	P16, P45, P63, P100, P200	Kilogram	
KO_020	KO_CT_M60_KG	Coniferous tree wood	M60 ≤ 60 %	P16, P45, P63, P100, P200	Kilogram	
KO_021	KO_CT_M65_KG	Coniferous tree wood	M65 ≤ 65 %	P16, P45, P63, P100, P200	Kilogram	
KO_022	KO_CT_M65+_KG	Coniferous tree wood	M65+ >65 %	P16, P45, P63, P100, P200	Kilogram	
KO_023	KO_ME_M20_KG	Mixed wood	M20 ≤ 20 %	P16, P45, P63, P100, P200	Kilogram	
KO_024	KO_ME_M25_KG	Mixed wood	M25 ≤ 25 %	P16, P45, P63, P100, P200	Kilogram	
KO_025	KO_ME_M30_KG	Mixed wood	M30 ≤ 30 %	P16, P45, P63, P100, P200	Kilogram	
KO_026	KO_ME_M35_KG	Mixed wood	M35 ≤ 35 %	P16, P45, P63, P100, P200	Kilogram	
KO_027	KO_ME_M40_KG	Mixed wood	M40 ≤ 40 %	P16, P45, P63, P100, P200	Kilogram	
KO_028	KO_ME_M45_KG	Mixed wood	M45 ≤ 45 %	P16, P45, P63, P100, P200	Kilogram	
KO_029	KO_ME_M50_KG	Mixed wood	M50 ≤ 50 %	P16, P45, P63, P100, P200	Kilogram	
KO_030	KO_ME_M55_KG	Mixed wood	M55 ≤ 55 %	P16, P45, P63, P100, P200	Kilogram	
KO_031	KO_ME_M60_KG	Mixed wood	M60 ≤ 60 %	P16, P45, P63, P100, P200	Kilogram	
KO_032	KO_ME_M65_KG	Mixed wood	M65 ≤ 65 %	P16, P45, P63, P100, P200	Kilogram	
KO_033	KO_ME_M65+_KG	Mixed wood	M65+ >65 %	P16, P45, P63, P100, P200	Kilogram	
KO_034	KO_L_M20_NM	Deciduous trees	M20 ≤ 20 %	P16, P45, P63, P100, P200	Loose cubic meter	
KO_035	KO_L_M25_NM	Deciduous trees	M25 ≤ 25 %	P16, P45, P63, P100, P200	Loose cubic meter	
KO_036	KO_L_M30_NM	Deciduous trees	M30 ≤ 30 %	P16, P45, P63, P100, P200	Loose cubic meter	
KO_037	KO_L_M35_NM	Deciduous trees	M35 ≤ 35 %	P16, P45, P63, P100, P200	Loose cubic meter	
KO_038	KO_L_M40_NM	Deciduous trees	M40 ≤ 40 %	P16, P45, P63, P100, P200	Loose cubic meter	

KO_039	KO_L_M45_NM	Deciduous trees	M45 ≤ 45 %	P16, P45, P63, P100, P200	Loose cubic meter
KO_040	KO_L_M50_NM	Deciduous trees	M50 ≤ 50 %	P16, P45, P63, P100, P200	Loose cubic meter
KO_041	KO_L_M55_NM	Deciduous trees	M55 ≤ 55 %	P16, P45, P63, P100, P200	Loose cubic meter
KO_042	KO_L_M60_NM	Deciduous trees	M60 ≤ 60 %	P16, P45, P63, P100, P200	Loose cubic meter
KO_043	KO_L_M65_NM	Deciduous trees	M65 ≤ 65 %	P16, P45, P63, P100, P200	Loose cubic meter
KO_044	KO_CT_M65+_NM	Deciduous trees	M65+ >65 %	P16, P45, P63, P100, P200	Loose cubic meter
KO_045	KO_CT_M20_NM	Coniferous tree wood	M20 ≤ 20 %	P16, P45, P63, P100, P200	Loose cubic meter
KO_046	KO_CT_M25_NM	Coniferous tree wood	M25 ≤ 25 %	P16, P45, P63, P100, P200	Loose cubic meter
KO_047	KO_CT_M30_NM	Coniferous tree wood	M30 ≤ 30 %	P16, P45, P63, P100, P200	Loose cubic meter
KO_048	KO_CT_M35_NM	Coniferous tree wood	M35 ≤ 35 %	P16, P45, P63, P100, P200	Loose cubic meter
KO_049	KO_CT_M40_NM	Coniferous tree wood	M40 ≤ 40 %	P16, P45, P63, P100, P200	Loose cubic meter
KO_050	KO_CT_M45_NM	Coniferous tree wood	M45 ≤ 45 %	P16, P45, P63, P100, P200	Loose cubic meter
KO_051	KO_CT_M50_NM	Coniferous tree wood	M50 ≤ 50 %	P16, P45, P63, P100, P200	Loose cubic meter
KO_052	KO_CT_M55_NM	Coniferous tree wood	M55 ≤ 55 %	P16, P45, P63, P100, P200	Loose cubic meter

KO_053	KO_CT_M60_NM	Coniferous tree wood	M60 ≤ 60 %	P16, P45, P63, P100, P200	Loose cubic meter	
KO_054	KO_CT_M65_NM	Coniferous tree wood	M65 ≤ 65 %	P16, P45, P63, P100, P200	Loose cubic meter	
KO_055	KO_CT_M65+_NM	Coniferous tree wood	M65+ > 65 %	P16, P45, P63, P100, P200	Loose cubic meter	
KO_056	KO_ME_M20_NM	Mixed wood	M20 ≤ 20 %	P16, P45, P63, P100, P200	Loose cubic meter	
KO_057	KO_ME_M25_NM	Mixed wood	M25 ≤ 25 %	P16, P45, P63, P100, P200	Loose cubic meter	
KO_058	KO_ME_M30_NM	Mixed wood	M30 ≤ 30 %	P16, P45, P63, P100, P200	Loose cubic meter	
KO_059	KO_ME_M35_NM	Mixed wood	M35 ≤ 35 %	P16, P45, P63, P100, P200	Loose cubic meter	
KO_060	KO_ME_M40_NM	Mixed wood	M40 ≤ 40 %	P16, P45, P63, P100, P200	Loose cubic meter	
KO_061	KO_ME_M45_NM	Mixed wood	M45 ≤ 45 %	P16, P45, P63, P100, P200	Loose cubic meter	
KO_062	KO_ME_M50_NM	Mixed wood	M50 ≤ 50 %	P16, P45, P63, P100, P200	Loose cubic meter	
KO_063	KO_ME_M55_NM	Mixed wood	M55 ≤ 55 %	P16, P45, P63, P100, P200	Loose cubic meter	
KO_064	KO_ME_M60_NM	Mixed wood	M60 ≤ 60 %	P16, P45, P63, P100, P200	Loose cubic meter	
KO_065	KO_ME_M65_NM	Mixed wood	M65 ≤ 65 %	P16, P45, P63, P100, P200	Loose cubic meter	
KO_066	KO_ME_M65+_NM	Mixed wood	M65+ > 65 %	P16, P45, P63, P100, P200	Loose cubic meter	

5.14 Energy value of wood at different levels of moisture

Net calorific value of wood fuels mostly depends on the type of wood, its density and moisture. The following text states net calorific values at different moisture levels for three most frequently used types of wood used for energy purposes: solid wood, stacked firewood and wood chips of granulation G30.

Net calorific value of wood fuels produced from beech at different levels of moisture

MOISTURE (V) AS %	BEECH					
	Solid wood		Firewood (1 m)		Wood chips (G30)	
	Density (kg/m^3)	Net calorific value (kWh/m^3)	Density (kg/prm)	Net calorific value (kWh/prm)	Bulk density (kg/nm^3)	Net calorific value (kWh/nm^3)
0	680	3.400	476	2.380	272	1.360
10	697	3.088	488	2.162	279	1.235
15	707	2.931	495	2.052	283	1.172
20	718	2.773	502	1.941	287	1.109
25	744	2.665	521	1.865	298	1.066
30	798	2.629	558	1.840	319	1.052
35	859	2.587	601	1.811	344	1.035
40	930	2.538	651	1.777	372	1.015
45	1.015	2.481	711	1.737	406	992
50	1.117	2.412	782	1.688	447	965

Source: Glavonjić B. 2012.

Net calorific value of wood fuels produced from oak at different levels of moisture

MOISTURE (V) AS %	OAK					
	Solid wood		Firewood (1 m)		Wood chips (G30)	
	Density (kg/m^3)	Net calorific value (kWh/m^3)	Density (kg/prm)	Net calorific value (kWh/prm)	Bulk density (kg/nm^3)	Net calorific value (kWh/nm^3)
0	670	3.350	469	2.345	268	1.340
10	700	3.104	490	2.173	280	1.242
15	718	2.980	503	2.086	287	1.192
20	738	2.853	517	1.997	295	1.141

25	772	2.763	540	1.934	309	1.105
30	827	2.726	579	1.908	331	1.090
35	891	2.683	623	1.878	356	1.073
40	965	2.632	675	1.842	386	1.053
45	1.053	2.572	737	1.801	421	1.029
50	1.158	2.501	810	1.751	463	1.000

Source: Glavonjić B. 2012.

Net calorific value of wood fuels produced from spruce at different levels of moisture

MOISTURE (V) AS %	SPRUCE					
	Solid wood		Firewood (1 m)		Wood chips (G30)	
	Density (kg/m^3)	Net calorific value (kWh/m^3)	Density (kg/m^3)	Net calorific value (kWh/prm)	Bulk density (kg/nm^3)	Net calorific value (kWh/nm^3)
0	430	2.269	301	1.589	172	908
10	453	2.123	317	1.486	181	849
20	483	1.973	338	1.381	193	789
30	542	1.893	380	1.325	217	757
40	633	1.832	443	1.282	253	733
50	759	1.746	532	1.222	304	698

Source: Glavonjić B. 2012.

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