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Construction and demolition waste (CDW) statistics report in Finland, Estonia, and Latvia

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Table of Contents

1. CDW AMOUNTS	3
1.1. Total amounts of CDW	3
1.1.2. References:.....	3
1.2. Material content (%) of construction and demolition waste without soil	3
1.2.1. References:.....	3
Appendices.....	4

1. CDW AMOUNTS

1.1. Total amounts of CDW

Table 1. Total CDW in Finland, Estonia, and Latvia

	FINLAND	ESTONIA	LATVIA
Generated CDW	15,1 Mt (ref 1)	0.790 Mt (ref 2)	2,8 Mt (ref 3)
Hazardous CDW	0,19 Mt (ref 1)	0.0066 Mt (ref 2)	0,08 Mt (ref 3)

1.1.2. References:

- 1) Laine-Ylijoki, J., Castell-Rüdenhausen, M., Kaartinen, T., Kärki, J., Pellikka, T., Punkkinen, H., Saastamoinen, H., Wahlström, M., Pohjakallio, M. (2018) Selvitys eräiden jätteiden ja rejektien käsittelykapasiteetin sekä muutaman jäteperäisen materiaalin markkinan tilanteesta Suomessa. Ympäristöministeriön raportteja 21/2018. [Online document]. 52 p. Available: <http://urn.fi/URN:ISBN:978-952-11-4812-5>
- 2) https://andmed.stat.ee/en/stat/keskkond_surve-keskkonnaseisundile_jaatmete-teke
- 3) <http://parissrv.lv/gmc.lv/#viewType=wastenanceprocessor&incrementCounter=4>

1.2. Material content (%) of construction and demolition waste without soil

Table 2. Material contents of CDW in Finland, Estonia, and Latvia

	FINLAND ¹	ESTONIA ²	LATVIA
Wood	25	4.73	10
Aggregate	23	46.36	18
Plastic	15	0.80	21
Paper & Board	8	0.00	10
Metal	8	29.38	24
Mineral	6	0.17	1
Glass	5	0.76	5
Other	10	17.79	11
TOTAL	100	100	100

¹Average, based on the four references (Liikanen et al. 2018, Ronkanen 2015, Vanhala 2010, Nasrullah et al. 2014)

²According to average CDW income without soil,
<https://jats.keskkonnainfo.ee/main.php?page=content&content=summary>

1.2.1. References:

- 1) Liikanen, M., Helppi, O., Havukainen, J. & Horttanainen, M. (2018) Rakennusjätteen koostumustutkimus – Etelä-Karjala. FISS Etelä -Karjalan teollisten symbioosien palvelu -hanke. LUT University, School of Energy Science, Sustainable Science. Research reports 82. [Research report]. 15 p. Available: <https://urn.fi/URN:ISBN:978-952-335-228-5>
- 2) Ronkanen, M. (2016) Rakennus- ja purkujättemateriaalin lajittelun kehittäminen. [Thesis work] Available. <https://urn.fi/URN:NBN:fi-fe2016101725332>
- 3) Vanhala, S. (2010). Kaatopaikka- ja rakennusjätteen lavakuormien laatu tutkimus Kujalan jätekeskuksessa. [Thesis work]
- 4) Nasrullah, M., Vainikka, P., Hannula, J., Hurme, M., Kärki, J. (2014) Mass, energy and material balances of SRF production process. Part 2: SRF produced from construction and demolition waste. Waste Management, 34: 2136-2170

Appendices

Appendix 1:

Table 3. Detailed material content of CDW (Finland / South Karelia)

Case example: FINLAND, SOUTH CARELIA (Lappeenranta area)		
	Material fractions	[%]
1	Aggregate	17
1.1	<i>*concrete</i>	3
1.2	<i>*brick</i>	2
1.3	<i>*other aggregates</i>	12
2	Gypsum	9
3	Wood	26
4	Ferrous metal	4
5	Glass	5
6	Plastic, rubber, styrofoam, PVC	18
6.1	<i>*plastic hard</i>	13
6.2	<i>*plastic soft</i>	4
6.3	<i>*PVC</i>	1
7	Wool	5
8	Paper & Board	7
9	Other	9
TOTAL		100 %

Appendix 2:

Table 4. Detailed material content of CDW (Estonia / Harjumaa/ Ida-Viirumaa)

Detailed material content of CDW, without soil			Estonia 2018-2022 average		Harjumaa	2022	Ida-Viirumaa	2022
Code	Name		t		t		t	
	1	Aggregate	447301	46.8%	225393	50.5%	111916	67.9%
17 01 01	1.1		189797	19.9%	93473	20.9%	38942	23.6%
17 01 02	1.2	bricks	85911	9.0%	36156	8.1%	3557	2.2%
17 01 03	1.3	tiles and ceramics	3773	0.4%	5108	1.1%	307	0.2%
17 01 06*	1.4	mixtures of, or separate fractions of concrete, bricks, tiles and ceramics containing hazardous substances	215	0.0%	0	0.0%	0	0.0%
17 01 07	1.5	mixtures of concrete, bricks, tiles and ceramics other than those mentioned in 17 01 06*	165972	17.4%	88895	19.9%	69039	41.9%
17 08 02	1.6	gypsum-based construction materials other than those mentioned in 17 08 01*	1632	0.2%	1760	0.4%	70	0.0%
17 02 01	2	wood	45489	4.8%	22518	5.0%	4555	2.8%
17 02 02	3	glass	7318	0.8%	5663	1.3%	321	0.2%
17 02 03	4	Plastic	1573	0.2%	1062	0.2%	271	0.2%
	5	Metals	282388	29.6%	105766	23.7%	36651	22.2%
17 04 01	5.1	copper, bronze, brass	3016	0.3%	1544	0.3%	296	0.2%
17 04 02	5.2	aluminium	7757	0.8%	2991	0.7%	451	0.3%
17 04 03	5.3	lead	1535	0.2%	80	0.0%	32	0.0%
17 04 04	5.4	zinc	109	0.0%	75	0.0%	0	0.0%
17 04 05	5.5	iron and steel	247678	25.9%	97489	21.8%	33591	20.4%
17 04 05 01	5.6	Railway tracks	3389	0.4%	289	0.1%	431	0.3%
17 04 06	5.7	tin	7	0.0%	1	0.0%	0	0.0%
17 04 07	5.8	mixed metals	16633	1.7%	2351	0.5%	696	0.4%
17 04 11	5.9	cables other than those mentioned in 17 04 10*	296	0.0%	211	0.0%	11	0.0%
17 04 11 01	5.10	Copper cables or electric wires, sheathed with insulating layers of polymeric or other materials	506	0.1%	365	0.1%	19	0.0%
17 04 11 02	5.11	Aluminium cables or electric wires, coated with an insulating layer of polymer or other materials	600	0.1%	209	0.0%	634	0.4%
17 04 11 03	5.12	Uninsulated copper cables or electric wires	7	0.0%	1	0.0%	0	0.0%
17 04 11 04	5.13	Uninsulated aluminium cables or electric wires	855	0.1%	161	0.0%	491	0.3%
17 09 04	6	mixed construction and demolition wastes other than those mentioned in 17 09 01*, 17 09 02* and 17 09 03*	171003	17.9%	86190	19.3%	11096	6.7%

Source: <https://jats.keskkonnainfo.ee/main.php?page=content&content=summary>

Appendix 3.

Table 5. FINLAND Waste generation in 2015 – 2019 (tons), divided into the EWC-Stat categories of the EU Waste Statistics Regulation by Year (NACE Section F: 41 – 43 Construction)

Category	2015	2016	2017	2018	2019	~Average
1.1 Spent solvents Hazardous	0	0	0	0	196	39
1.4, 2, 3.1 Chemical wastes Non-hazardous	0	0	36	0	0	7
1.4, 2, 3.1 Chemical wastes Hazardous	0	0	0	2 688	39	545
3.2 Industrial effluent sludges Non-hazardous	23	3	0	0	0	5
3.2 Industrial effluent sludges Hazardous	0	0	0	43		11
3.3 Sludges and liquid wastes from waste treatment Hazardous	0	0	2	0	0	0
6.1 Metallic wastes, ferrous Non-hazardous	43 929	53 131	67 850	47 149	0	42 412
6.2 Metallic wastes, non-ferrous Non-hazardous	1 929	2 734	11 555	6 848	701	4 753
6.3 Metallic wastes, mixed ferrous and non-ferrous Non-hazardous	66 583	69 871	85 060	115 896	4	67 483
7.1 Glass wastes Non-hazardous	196	161	95	601	197	250
7.2 Paper and cardboard wastes Non-hazardous	40	22	0	261	306	126
7.3 Rubber wastes Non-hazardous	122	0	0	0	0	24
7.4 Plastic wastes Non-hazardous	6 917	6 802	8 712	287	8 927	6 329
7.5 Wood wastes Non-hazardous	278 857	263 996	192 343	400 187	379 644	303 005
7.5 Wood wastes Hazardous	809	4	532	643	865	571
7.7 Waste containing PCB Hazardous	0	0	0	626	184	162
8 (excl. 8.1, 8.41) Discarded equipment (excluding discarded vehicles, batteries and accumulators wastes) Hazardous	45	54	0	0	0	20
9.1 Animal and mixed food waste Non-hazardous	2	0	0	0	0	0
9.2 Vegetal wastes Non-hazardous	2 929	1 026	749	683	874	1 252
10.1 Household and similar wastes Non-hazardous	1 397	5 966	6 908	0	7 763	4 407
10.2 Mixed and undifferentiated materials Non-hazardous	3 000	7 763	0	418	12 067	4 650
10.2 Mixed and undifferentiated materials Hazardous	0	0	0	955	21	195
10.3 Sorting residues Non-hazardous	12 317	20 074	22 280	34 255	16 952	21 176
10.3 Sorting residues Hazardous	0	31	0	0	0	6
11 Common sludges Non-hazardous	314	29	255	5	0	121
12.1 Mineral waste from construction and demolition Non-hazardous	1 226 394	1 267 270	1 081 313	873 963	1 025 267	1 094 841
12.1 Mineral waste from construction and demolition Hazardous	47 267	48 311	61 857	86 317	79 692	64 689
12.2, 12.3, 12.5 Other mineral wastes Non-hazardous	9 791	4 360	44 054	276	161	11 728
12.2, 12.3, 12.5 Other mineral wastes Hazardous	32 562	32 914	39 269	49 230	59 760	42 747
12.4 Combustion wastes Non-hazardous	50 608	2 900	683	16 338	1 952	14 496
12.4 Combustion wastes Hazardous	0	0	0	6	2	2
12.6 Soils Non-hazardous	13 165 490	11 964 391	13 065 747	13 931 286	11 921 028	12 809 588
12.6 Soils Hazardous	105 166	60 115	36 845	109 881	145 927	91 587
12.7 Dredging spoils Hazardous	0	4 720	0	2 326	0	1 409
12.8, 13 Mineral wastes from waste treatment and stabilised wastes Non-hazardous	3 664	8 520	488	34 063	4 599	10 267
12.8, 13 Mineral wastes from waste treatment and stabilised wastes Hazardous	0	0	0	0	281	56
TOTAL	15 060 351	13 825 168	14 726 633	15 715 231	13 667 409	14 598 958
of which hazardous	185 849	146 149	138 505	252 715	286 967	202 037

Reference: Statistics Finland: EN: https://pxdata.stat.fi/PxWeb/pxweb/en/StatFin/StatFin_jate/statfin_jate_pxt_003.px/ & FI: https://pxdata.stat.fi/PxWeb/pxweb/fi/StatFin/StatFin_jate/statfin_jate_pxt_003.px/

Appendix 4.

Table 6. Estonian construction and demolition waste generation and import 2018-2022

EWC code	Name	2018		2019		2020		2021		2022		Average	
		waste generation	import	waste generation	import	waste generation	import	waste generation	import	waste generation	import	waste generation	import
17 01 01	concrete	184126		173357		147544		190563		253394		189797	
17 01 02	bricks	77507	183	81906		71520		85253		113187		85875	37
17 01 03	tiles and ceramics	6233		3691		1630		1756		5554		3773	
17 01 06*	mixtures of, or separate fractions of concrete, bricks, tiles and ceramics containing hazardous substances	21		468		268		310		9		215	
17 01 07	mixtures of concrete, bricks, tiles and ceramics other than those mentioned in 17 01 06*	32601		198824		134063		283211		181163		165972	
17 02 01	wood	34634	1	60129		40229	46	53103		39303		45480	9
17 02 02	glass	1708	1967	9885		7811	133	7493		7593		6898	420
17 02 03	Plastic	497	171	899	74	2253	92	1421	237	1909	313	1396	177
17 02 04*	glass, plastic and wood containing or contaminated with hazardous substances	3179		5187		6016		1995		2804		3836	
17 03 01*	bituminous mixtures containing coal tar	24		8		32		10		4		16	
17 03 02	bituminous mixtures other than those mentioned in 17 03 01*	277396	40139	285665		174965		121317	51697	134002	2591	198669	18885
17 03 03*	coal tar and tarred products	4		2		0		0		4		2	
17 04 01	copper, bronze, brass	3217	628	2569	99	2732	34	3014	43	2667	76	2840	176
17 04 02	aluminium	6585	372	6489	374	6750	913	8567	1612	5480	1643	6774	983
17 04 03	lead	276	1179	259	1148	234	534	3162	517	153	214	817	718
17 04 04	zinc	79		108		121		155		84		109	
17 04 05	iron and steel	219057	23482	237159	12469	226781	6073	282917	1511	225937	3005	238370	9308
17 04 05 01	Railway tracks	2230		2992		2616		5681		3427		3389	
17 04 06	tin	8		8		6		7		3		7	
17 04 07	mixed metals	7522	2750	4659	13935	4564	14217	4373	17680	4293	9173	5082	11551
17 04 09*	metal waste contaminated with hazardous substances			13								3	
17 04 10*	cables containing oil, coal tar and other hazardous substances	2		0									
17 04 11	cables other than those mentioned in 17 04 10*	149	4	148		385		420	63	255	56	271	25
17 04 11 01	Copper cables or electric wires, sheathed with insulating layers of polymeric or other materials	352	47	424	184	517		556		447	2	459	47
17 04 11 02	Aluminium cables or electric wires, coated with an insulating layer of polymer or other materials	462	49	310		266		954	3	954		589	10
17 04 11 03	Uninsulated copper cables or electric wires	28		2		2		1		1		7	
17 04 11 04	Uninsulated aluminium cables or electric wires	818		655		377		1192		877	357	784	71
17 05 03*	soil and stones containing hazardous substances	46170		23935		72265		58866		23279	684	44903	137
17 05 04	soil and stones other than those mentioned in 17 05 03*	1553092		1540080		1590772		1948025		1958414	2	1718076	
17 05 05*	dredging spoil containing hazardous substances	340		43607		66183		27500		761		27678	
17 05 06	dredging spoil other than those mentioned in 17 05 05*	115066		123905		87781		93492		75517		99152	
17 05 07*	track ballast containing hazardous substances			0		0		0		12921		2584	

17 05 08	track ballast other than those mentioned in 17 05 07*	171902		343509		108618		92505		35761		150459	
17 06 01*	insulation materials containing asbestos	161		3187		467		322		423		912	
17 06 03*	other insulation materials consisting of or containing hazardous substances			310		0		0		3		63	
17 06 04	insulation materials other than those mentioned in 17 06 01* and 17 06 03*	246		114		89		239		367		211	
17 06 05*	construction materials containing asbestos	8174		10765		12617		11677		12269		11100	
17 08 02	gypsum-based construction materials other than those mentioned in 17 08 01*	468		1074		1935		2034		2651		1632	
17 09 04	mixed construction and demolition wastes other than those mentioned in 17 09 01*, 17 09 02* and 17 09 03*	169583	31604	158719	27657	149523		163308		154622		159151	11852

Table 7. CDW GENERATION by Year, Kind of waste and Economic activity in Estonia

	..mineral waste from construction and demolition (non hazardous), t	..mineral waste from construction and demolition (hazardous), t
Economic activities total	789885	6617
Agriculture, forestry, fishing and aquaculture	15063	1
..agriculture and forestry
..fishing and aquaculture
Mining and quarrying	116	0
Manufacture of food products and beverages	615	1
Manufacture of textiles, wearing apparel and leather products	355	0
Manufacture of wood and wood products	10290	0
Manufacture of pulp, paper and paper products; printing and reproduction of recorded media	128	0
Manufacture of coke and refined petroleum products	430	0
Manufacture of chemical, pharmaceutical, rubber and plastic products	1623	0
Manufacture of other non-metallic mineral products	9754	0
Manufacture of basic metals and fabricated metal products	3131	0
Manufacture of computers, electronic and optical products, electrical equipment and transport equipment	1944	0
Manufacture of furniture, jewellery, musical instruments, toys; repair and installation of machinery and equipment	5659	0
Electricity, gas, steam and air conditioning supply	2405	2
Water collection, treatment and supply, sewerage	568	0
Waste collection, treatment and disposal activities, materials recovery	41199	22
Construction	444383	54
Services (except wholesale of waste and scrap)**	206947	6537
Wholesale of waste and scrap	2228	0
Households	43047	1

"Unit: tons

* Dry matter.

On 01.01.2020, an amendment to the Regulation of the Minister of the Environment "Procedure for Classification of Waste and List of Waste" and its Annex 1 entered into force, which changed oil shale ashes from hazardous waste to non-hazardous waste. Therefore data of year 2020 about generation of combustion wastes (non hazardous) and combustion wastes (hazardous) are not comparable with data of previous years

Economic activity (EMTAK 2008):

Services (except wholesale of waste and scrap)**:

** Publishing activities; wholesale and retail trade; repair of motor vehicles, motorcycles and personal and household goods; hotels and restaurants; transport, storage and communication; financial intermediation; real estate, renting and business activities; public administration; education; health and social work; other community, social and personal service activities

Appendix 5.

Table 8. Latvia, construction and demolition waste generation

Code	Waste class	Quantity (t)
170402	Aluminium	497,44
170302	Mixtures containing asphalt not falling in Class 170301	5947,53
170107	Concrete, bricks, tiles, ceramic mixtures not falling in Class 170106	19238,25
170101	Concrete	6281,45
170802	Plaster-based building materials not falling in Class 170801	431,27
170904	Construction waste not falling within Classes 170901, 170902 and 170903	64609,23
101314	Cement waste and sludges	1,20
110501	Solid zinc	189,06
110502	Zinc ash	144,46
170404	Zinc	0,01
170407	Mixed metals	414,48
150103	Wooden packaging	16151,51
170201	Wood	468,67
191207	Wood not falling in Class 191206	5594,25
200138	Wood not falling in Class 200137	2,41
030301	Bark of trees	0,00
160118	Non-ferrous metals	1325,97
191203	Non-ferrous metals	2830,53
191002	Non-ferrous metal waste	59,77
120103	Non-ferrous metal polishing and forming wastes	619,06
120104	Non-ferrous metal dust and particulates	31,97
160117	Ferrous metals	41545,90
191202	Ferrous metals	26791,66
120101	Ferrous metal polishing and forming wastes	984,16
120102	Ferrous metal dust and particulates	1336,12
020110	Metal waste	557,03
150104	Metal packaging	11473,65
120115	Metalworking waste not falling within Class 120114	114,33
200140	Metals	47503,93
030307	Residues mechanically separated from recycled paper and paperboard	227,61
150101	Paper and paperboard packaging	48505,18

191201	Paper and paperboard	3315,81
200101	Paper and paperboard	3928,22
160119	Plastics	399,94
170203	Plastics	36,92
200139	Plastic	51,38
191204	Plastic and rubber	8772,32
070213	Waste plastic	301,52
020104	Waste plastic (excluding packaging)	14,36
150102	Plastic packaging	111216,21
120105	Waste from surface treatment and moulding of plastics	56,02
030308	Waste sorting of paper and paperboard for recycling	5600,95
191216	Sorted construction waste for further use (e.g. road construction)	77832,22
150107	Glass packaging	19370,87
101103	Waste glass fibres	9419,04
160120	Glass	256,32
170202	Glass	4,16
191205	Glass	1438,77
200102	Glass	514,70
170403	Lead	4,74
170401	Copper, bronze, brass	14,72
030105	Sawdust, wood shavings, wood in decay and particles of wood not falling within Class 030104	37897,75
191001	Cast iron and iron waste	103,67
170405	Cast iron and steel	4189,33
170102	Bricks	117,85
Sum		588735,86

Reference: LV http://parissrv.lvgmc.lv/#viewType=home_view