

Preliminary Base Case Analysis: EU furniture market

This is a supplementary draft report to the Task 1-4 reports in the preparatory study. It aims to support defining potential “representative products” as base cases for the furniture product group in the preparatory study for ESPR of furniture. It represents a work in progress, and supports the [slides](#) presented during the stakeholder meeting on 6th October, 2026. Stakeholders are welcome to provide feedback to the study team at eco-furniture@trinomics.eu

1 Summary

The findings from Task 2 of the preparatory study show that production and sales market data in the EU on furniture sales are not grouped cleanly by product function and type. The only product group where Prodcom gives kg values is metal furniture. The study team similarly analysed over 200 EPDs for furniture, which gave a mixed picture that provides illustrative product compositions but no market weighting on the materials used. It was therefore necessary to come up with a methodology to try and determine the shares of different materials used in different product types in the market and their shares across different market segments.

This methodology is based on using EU trade and production statistics to determine mass of each product type used in the EU; example products (based on Environmental Performance Declarations (EPDs)) were then used to estimate compositions of each product type. The two data sources are then combined into a weighted average.

Our initial analysis estimates that the EU27 puts 17.9 Mt of furniture on the market each year in the seven categories studied (range 13.7–22.2 Mt). About two-thirds of that mass is wood: 52% wood-based panels and 15% solid wood. Steel is 17%, plastics and foam 7%.

Using this approach, we compile a base case composition of each overarching furniture category to determine what the average kilogram placed on the EU market is made of. This is based on developing 44 different product archetypes, split by Domestic, Commercial and Outdoor segments.

Where we need your feedback:

1. **Production tonnage** by product type. EU production is reported in euros, so our conversion to tons is a source of uncertainty. Our comparison with French waste data seems to show the overall result it is not far off, but any other comparisons by category would be welcome.
2. **Assumed shares of mixed trade codes:** trade codes such as “wooden bedroom furniture” require assumptions on what percentage is beds rather than wardrobes, and how much “other metal furniture” is garden furniture. Confirmation that are assumed shares seem plausible would be welcome.
3. **Beds:** what frames and bases are made of, and how much of the market is hotels and other commercial users. All bed compositions are currently estimates, since no usable EPDs were found.
4. **Sofa frames:** how much is solid wood and how much is particleboard, plywood or MDF in mass-market sofas.
5. **Domestic and outdoor products:** bills of materials for flat-pack storage, dining tables, budget office chairs and garden furniture. Our product data come mostly from office and contract furniture.

2 Methodology

We combine two data sources:

- **market data** from Eurostat on how much of each product type is used in the EU.
- **Product composition data** based on example EPDs from products.

These data were combined using the following steps:

1. Amount of furniture entering the EU market, by trade code

Imports and exports come from Eurostat Comext, which reports kilograms. EU production comes from Eurostat Prodcom, which reports euros; we convert euros to kilograms with a price per kilogram. For each of 32 trade codes: EU production + imports – exports, in kilograms, averaged over 2021–2024.

We do not know the exact price per kilogram of EU-made furniture, so production mass is calculated twice. The low case uses the price per kilogram of EU exports (assumed to be more expensive products, so fewer kilograms per euro); the high case uses the price of imports (assumed to be cheaper products, so more kilograms). The midpoint is then taken as halfway between these values. The range covers only this conversion. It does not include the uncertainty from the split assumptions or the compositions, which is estimated separately in Step 2.

2. Codes sorted into functions

Trade codes describe rooms and materials (“wooden bedroom furniture”), not functions (“wardrobe” or “bed”). Mixed codes are split with stated assumptions, for example we assume 30% of wooden bedroom furniture is beds. Office furniture and kitchens have their own codes and need no split.

3. Each category is divided into archetypes

44 typical product types, by segment (domestic, commercial, outdoor) and construction (flat-pack panel, solid wood, metal frame and so on). Each archetype receives its share of the category's mass.

4. Each archetype has estimated bill of materials

From the best available source: published EPDs; the preparatory study's EPD data (106 EU-made EPDs, cleaned); published product inventories and JRC averages; and engineering estimates where nothing else exists (18 archetypes, including all beds and outdoor furniture). Packaging is removed; materials are grouped into 11 classes.

5. Market and EPD data are combined

An aggregated category's base case is the average of its archetypes, weighted by their share of the category's mass. EU material totals are category tonnage × base case, summed across categories.

6. Results are compared with other data

Validity of results against other data sources, though there are few (Section 5).

All quantities are masses. Material density therefore plays no role in the calculation.

Sources: Eurostat DS-059358 (Prodcom) and DS-045409 (Comext), extracted September 2026; ESPR furniture preparatory study EPD analysis (Task 0).

3 Trade codes used

Table 1 lists 32 CN codes, linked to 18 Prodcom codes, that cover the seven overarching categories of furniture. Where one code holds several functions, a split into different functional categories is assumed (shares in the last column).

We consider the following overarching categories:

- Storage
- Kitchens
- Tables
- Upholstered seating
- Beds
- Non-upholstered seating
- Office chairs

We consider the following market segments:

- Domestic
- Commercial
- Outdoor

Out of scope in this analysis: mirrors, hallstands, bathroom and shop furniture. Trade codes not included: wooden shop furniture (9403.60.30), mattresses (9404.2x), medical furniture (9402), furniture parts (9403.9x) and vehicle seats.

Questions to stakeholders on Table 1:

- Are the production tonnages plausible
- Are the assumed split of different categories plausible?
- Is our scope right? Should shop furniture be included?

Table 1: Trade Codes used and assumed segment/product splits

CN code	Prodcom	Content	EU27 kt/yr	Allocated to (assumed split)
9401.31, .39	31001150	Swivel seats	400	Office chairs (imports = budget segment)
9401.41, .49	31001210	Seats convertible into beds	424	Upholstered seating, domestic sofas
9401.52, .59	31001230	Seats of bamboo, cane	6	Non-upholstered seating: 50% domestic, 50% outdoor
9401.61	31001250	Upholstered seats, wooden frame	1,193	Upholstered seating: 90% domestic, 10% commercial
9401.69	31001290	Other seats, wooden frame	161	Non-upholstered: 65% domestic, 20% commercial, 15% outdoor
9401.71	31001170	Upholstered seats, metal frame	529	Upholstered seating: 60% domestic, 40% commercial
9401.79	31001190	Other seats, metal frame	471	Non-upholstered: 30% domestic, 30% commercial, 40% outdoor
9401.80	31001300	Other seats (mainly plastic)	119	Non-upholstered: 30% domestic, 10% commercial, 60% outdoor
9403.10.51	31011100	Metal office desks	145	Tables, commercial
9403.10.58	31011100	Metal office furniture ≤ 80 cm	81	50% storage, 50% tables, commercial
9403.10.91, .93, .98	31011100	Metal office cupboards, filing cabinets, other > 80 cm	264	Storage, commercial
9403.30.11	31011200	Wooden office desks	615	Tables, commercial
9403.30.19	31011200	Wooden office furniture ≤ 80 cm	373	50% storage, 50% tables, commercial
9403.30.91, .99	31011200	Wooden office cupboards, other > 80 cm	318	Storage, commercial
9403.20.20	31091100	Metal beds	117	Beds
9403.20.80	31091100	Other metal furniture	1,818	30% storage, 15% tables, 40% outdoor, 15% out of scope
9403.40.10, .90	31021000	Kitchen furniture	4,266	Kitchens
9403.50	31091230	Wooden bedroom furniture	2,266	65% storage, 30% beds, 5% out of scope
9403.60.10	31091250	Wooden dining and living-room furniture	2,525	55% storage, 35% tables, 10% out of scope
9403.60.90	31091300	Other wooden furniture	2,221	50% storage, 15% tables, 15% outdoor, 20% out of scope
9403.70	31091430	Furniture of plastics	167	35% storage, 10% tables, 45% outdoor, 10% out of scope
9403.82, .83	31091450	Furniture of bamboo, rattan	18	30% storage, 30% tables, 30% outdoor
9403.89	31091450	Furniture of other materials (glass, stone...)	106	30% storage, 30% tables, 30% outdoor
9404.10	31031100	Mattress supports (bed bases)	445	Beds: 50% box-spring bases

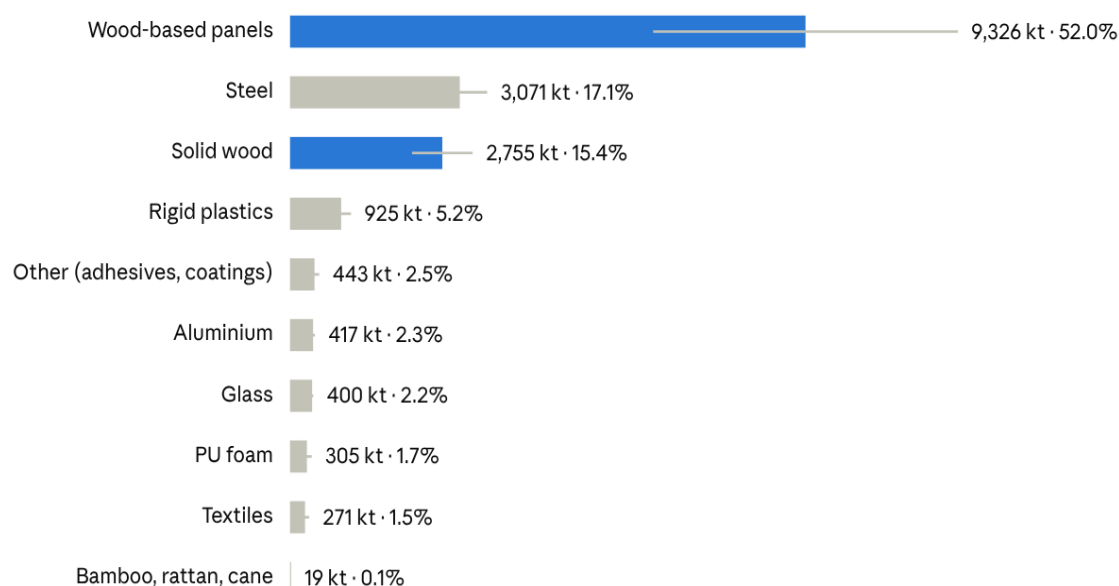
Sources: Eurostat DS-059358, DS-045409; tonnage = central case, average 2021–2024. Splits in right column are estimated.

4 Results: EU Totals

About 17.9 Mt of furniture is placed on the EU27 market each year in the seven categories. Wood-based panels are just over half of it; steel and solid wood follow, each about one-sixth.

Figure 1: Total shares by material type of furniture put on market

Material content of furniture placed on the EU27 market, kt per year, central case; wood = 67% of the 17,932 kt shown
Thin line = low-high range from the price-per-kg bounds on EU production weight

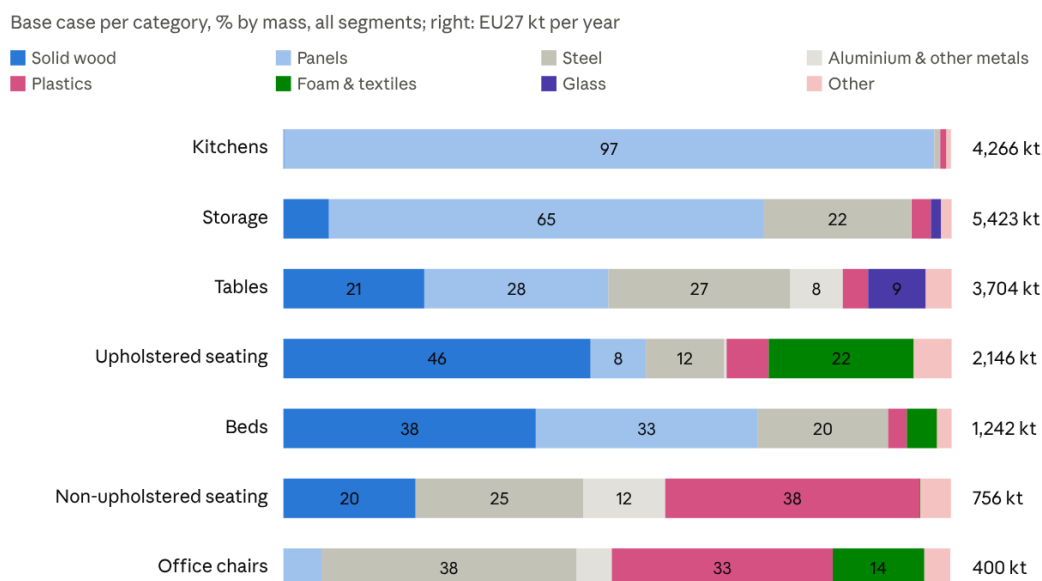


Source: study team calculation based on Eurostat DS-059358, DS-045409. Other metals (4 kt) not shown.

Kitchens strongly impact this total as they are 4.3 Mt and almost entirely panels in current composition set. Without kitchens, wood falls to 58% and steel rises to 22%. The ranges indicated on the graph show the high/low shares in converting EU production from euros to tonnes; the shares themselves move little in the low – high cases (panels 48–54%).

4 Results by category and segment

Figure 2: Base cases per category (average 2021–2024).



Source: study team calculations

Based on the current compositions and category splits, we find 78% of the mass is domestic, 14% commercial and 8% outdoor. Commercial furniture carries much more steel (commercial storage 42% steel against 19% domestic). Outdoor seating replaces wood with aluminium (30%) and plastics (33%). The segment split rests on assumptions by trade code, except for office furniture and office chairs, which have their own codes. Beds and kitchens are currently (wrongly) considered 100% domestic.

Table 2: Segment Split of Base Case Categories

Category	Domestic	Commercial	Outdoor
Storage	4,614 kt (85%)	809 kt (15%)	–
Kitchens	4,266 kt (100%)	–	–
Tables	1,527 kt (41%)	987 kt (27%)	1,190 kt (32%)
Upholstered seating	1,815 kt (85%)	331 kt (15%)	–
Beds	1,242 kt (100%)	–	–
Non-upholstered seating	284 kt (38%)	185 kt (25%)	286 kt (38%)
Office chairs	204 kt (51%)	196 kt (49%)	–

Source: study team calculations

Each overarching category is split into three to ten archetypes. The heatmap table below shows the compositions used for each of 44 sub-categories, representing these archetypes. The share is each archetype's part of the category's mass on the EU market. The compositions in normal type are sourced from EPDs, published product inventories or JRC averages. The products in grey italics are engineering estimates.

Figure 3: Archetype Material and Market Shares by Category

% by mass; darker = larger share. Grey italic = engineering estimate (18 of 44).

Seg.: D domestic, C commercial, O outdoor. Share = % of the category's mass.

Archetype	Seg.	Share	Solid wood	Panels	Steel	Aluminium	Other metals	Plastics	PU foam	Textiles	Natural fibre	Glass	Other
Upholstered seating													
Sofa, wood frame (incl. sofa-beds)	D	56%	55		4			9	12	12			8
Armchair, wood frame	D	11%	61	12	2				12	9			4
Padded dining chair	D	4%	80	4				5	5	4			2
Upholstered, metal frame	D	15%	17	22	38			3	8	9			2
Contract lounge seating	C	6%	26	38	1				26	7			3
Visitor / conference chair	C	5%	13	9	44	7		12	5	6			4
Contract sofa	C	5%	26	20	25	2			15	6			5
Non-upholstered seating													
Wooden chair / stool	D	14%	92		1		1						5
Metal-frame chair	D	19%			46			54					
Plastic chair	D	5%						94					6
Cane / rattan chair	D	<1%			6						90		4
Wooden contract chair	C	4%	95		1								4
Stacking / café chair	C	20%			37	5		55	1				3
Wooden garden chair	O	3%	91		6								3
Metal garden chair	O	25%			35	45		14					6
Cane / rattan garden chair	O	<1%			6						90		4
Plastic monobloc chair	O	9%						94					6
Storage													
Flat-pack panel cabinet	D	59%		87	10			2					
Solid-wood / glazed cabinet	D	15%	44	39	4							10	2
Metal shelving / storage	D	10%			90			3					7
Plastic storage	D	1%						95					5
Bamboo / rattan storage	D	<1%			5						85		10
Steel office storage	C	6%		1	94			1					4
Wood-based office storage	C	9%		88	10			2					
Office chairs													
Budget / home-office chair	D	51%		10	40			25	12	8			5
Contract task chair, AI base	C	20%		1	35	23		27	6	2			5
Mid-range task chair, PA base	C	29%		1	37	2		51	6				1
Tables													
Occasional / coffee table	D	10%	4	67	22	4							2
Panel dining table	D	14%	16	62	15			1					7
Solid-wood dining table	D	9%	96		2								1
Glass/metal/stone table	D	8%			40							55	5
Bamboo / rattan table	D	<1%			5						85	5	5
Office desk	C	27%	6	47	43	1		1					2
Wooden garden table	O	9%	90		7								3
Metal garden table	O	20%			35	35		5				20	5
Bamboo / rattan garden table	O	<1%			5						85	5	5
Plastic garden table	O	2%						95					5
Beds													
Panel bed + slatted base	D	51%	25	60	10			3					2
Solid-wood bed + slatted base	D	22%	90		5			2					3
Metal bed frame	D	9%	10		85			3					2
Box-spring base	D	18%	25	15	30			3	10	15			2
Kitchens													
Chipboard + melamine front	D	70%		97	1			1					1
MDF + painted front	D	20%		97	1			1					1
Chipboard + veneer front	D	10%	1	97	1			1					1

Sources: output of the analysis, based on product EPDs; ESPR furniture preparatory study EPD analysis; Yang et al. (2025); Aggarwal et al. (2026); JRC103217 Table 22.

5 Validation Checks

The tonnages agree with the independent data we could find, while the compositions agree for indoor furniture but not for outdoor furniture.

We compare with two main data sources:

- EPR data of furniture put on French market
- JRC 2014 study to support the Ecolabel stakeholder questionnaire on product composition

Table 3: Validation of Methodology and Results

Check	This work	Reference	Interpretation
Metal furniture production (31091100, the only code Eurostat also reports in kg)	1.13 Mt	1.09 Mt reported	+4%: the euro-to-kg conversion works
Kitchen units	4.3 Mt	4.1 Mt (French EPR data 2023, 9.2 kg per person, scaled to EU27)	+4%
Total in scope	17.9 Mt	about 20 Mt (French EPR data scaled to EU27, includes mattresses and textiles)	consistent
Wood-based panels in EU-made furniture	9.6 Mt	14.3 Mt implied by European Panel Federation statistics	about two-thirds; the panel industry's "furniture" use is broader and we took a mid-point value for average panel density
Wood / metal / plastic, domestic indoor	76 / 13 / 5%	72 / 12 / 10% (JRC stakeholder survey averages)	agrees
Wood / metal / plastic, office and commercial	46 / 41 / 11%	53 / 28 / 11% (JRC)	close
Wood / metal / plastic, outdoor	22 / 48 / 15%	47 / 23 / 27% (JRC)	differs: our outdoor archetypes are estimates
Wood share by product type vs the study's EPD screening	–	9 product types	within 10 points for 7 of 9

Source: study team calculations, see annex for French and JRC data points: Eurostat DS-059358; ADEME (2024) Filière des éléments d'ameublement – données 2023; JRC103217 Table 14;

Limitations of the approach:

The market data represents the EU market; the product data are illustrative.

- **Production weight is estimated.** Eurostat gives EU production in euros; the price-per-kilogram conversion gives a total of 13.7–22.2 Mt.
- **Trade codes are not functions.** About 30 assumptions split codes into storage, tables, beds, outdoor furniture and segments.
- **EPDs are Example products, not a sales-weighted market sample.** We don't have EPDs for 18 archetypes, which are based on engineering estimates, including all beds and outdoor furniture.
- **Office and contract furniture are over-represented by EPDs.** Manufacturers that publish EPDs are mostly Nordic and contract suppliers, and some groups are dominated by one manufacturer (19 of 23 wood-storage EPDs). Mass-market domestic furniture is under-represented.
- **Coarse material classes.** Panel types and steel grades are not separated; the polymer type is known for only about a third of plastics.

- **Mass only, annual flow.** The results describe what is placed on the market each year, not the volume, product counts or lifetimes.

6 Feedback questions and how to send data

Table 4: Questions to Stakeholders

#	Question	Our current assumption
1	What is EU furniture production in tonnes, by product type?	Euros converted with export and import prices per kg
2	What are bed frames and bases made of? What share of beds goes to hotels and other commercial users?	All bed compositions estimated; 0% commercial
3	Are mass-market sofa frames solid wood, or particleboard, plywood and MDF?	Solid wood (55% of sofa mass)
4	What do mixed trade codes contain? E.g. share of wooden bedroom furniture that is beds; share of other metal furniture that is garden furniture	30% beds; 40% outdoor (Section 2)
5	How much domestic storage and how many dining tables are panel-based rather than solid wood?	80% and 60% panel-based
6	Bills of materials for domestic and outdoor products: flat-pack storage, dining tables, budget office chairs, garden furniture	EPDs from office and contract suppliers; estimates
7	How much steel do kitchen units contain (runners, hinges, legs)?	About 1%
8	Is our scope right? Should shop furniture be included?	Wooden shop furniture excluded

The most useful form of data

1. **Measured by what:** mass is best. A share of units needs unit weights (20% of beds sold is closer to 27% of the tonnage, as hotel beds are heavier). A share of value is hardest to use.
2. **What is included:** for example frame and base only, or with mattress.
3. **Which market and year:** EU27 or one country; production or sales.
4. **What it is based on:** sales data, EPR declarations, a survey or expert judgement, and the share of the market covered.
5. **How sure:** a range (15–25%) is more useful than a precise-looking single figure.

Better is a small table by product type, for example tonnes of panel beds, box-spring bases and metal frames for domestic and commercial use. For compositions, the best form is kilograms per material for a named typical product with its total weight; next best is percentage by mass.

Please indicate whether any figure you send is confidential and how it may be cited.

7 References

Eurostat (2026). Sold production, exports and imports by PRODCOM list, DS-059358, EU27, 2021–2024 (extracted 29 September 2026).

Eurostat (2026). EU trade since 1988 by HS2-4-6 and CN8, DS-045409, EU27 extra-EU trade, 2021–2024 (updated 15 September 2026).

ESPR furniture preparatory study (2026). Task 1–4 report; Task 0 life-cycle analysis; EPD analysis (196 EPDs, of which 106 EU-made EPDs used here).

Donatello S., Moons H., Cordella M., Kowalska M., Kaps R., Wolf O., Hidalgo C. and Fuentes N.; 2014; Revision of EU Ecolabel and EU Green Public Procurement criteria furniture products. Preliminary Report; doi:10.2791/075599 JRC103217.
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Yang D., Vezzoli C., Su H. (2025). Comprehensive life cycle assessment of 25 furniture pieces across categories for sustainable design. Scientific Reports 15, 13968.

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Annex

Share of rigid plastics based on EPD data (only about a third of EPDs stated the type of plastic):

Category	PA	PP	ABS	POM	PE	PVC	Elastomers	Unspecified
Office chairs	67%	29%	1%	3%	0%	0%	0%	0%
Storage units	1%	16%	76%	0%	0%	0%	0%	7%
Seating, non-upholstered	15%	21%	0%	0%	0%	0%	4%	59%
Tables	1%	1%	59%	1%	1%	12%	0%	25%
Seating, upholstered	9%	25%	1%	2%	0%	0%	0%	63%

Table 3: France 2023, placed on market by majority material (ADEME 2024, Fig. 4), % of tonnage

Wood	60,2%
Metal	12,3%
Upholstered (rembourrés)	10,2%
Mattresses	2,8%
Plastic	3,6%
Textiles	1,5%
Other (inert, glass, wicker...)	9,4%

Source: ADEME (2024). [Filière des éléments d'ameublement – données 2023](#).

Figure 4: JRC Stakeholder Questionnaire Values – Average Furniture Composition

Table 14. Percentage of weight of the component materials in different types of furniture

Type of furniture	Material	Stakeholder n°									Average
		1	2	3	4	5	6	7	8	9	
Domestic indoor furniture (%)	Wooden	75	75	-	60	75	90	60	70	-	72
	Metal	15	20	-	10	8	5	20	5	-	12
	Plastic	5	5	-	25	3	5	20	5	-	10
	Other	5	0	-	5	14	0	0	20	-	6
Domestic outdoor furniture (%)	Wooden	30	30	-	40	30	-	75	75	-	47
	Metal	40	30	-	25	30	-	5	5	-	23
	Plastic	20	40	-	30	30	-	20	20	-	27
	Other	10	0	-	5	10	-	0	0	-	4
Professional office furniture (%)	Wooden	35	68	30	45	45	85	60	80	30	53
	Metal	30	30	40	25	40	10	30	10	40	28
	Plastic	25	2	15	25	5	5	10	5	10	11
	Other	10	0	15	5	19	0	0	5	20	7
School furniture (%)	Wooden	35	-	25	35	40	-	50	80	40	44
	Metal	30	-	55	45	50	-	30	10	40	37
	Plastic	25	-	15	15	5	-	20	10	20	11
	Other	10	-	5	5	5	-	0	0	0	4
Restaurant & Hotel furniture (%)	Wooden	35	-	-	50	40	-	50	60	40	46
	Metal	30	-	-	35	20	-	30	5	20	23
	Plastic	25	-	-	15	20	-	20	5	20	18
	Other	10	-	-	5	20	-	0	30	20	14

Source: Reproduced from (Donatello S. et al., 2014) Market questionnaires answered by furniture manufacturers and furniture associations