

Guidelines for Topten Public Procurers

Storage refrigerators and freezers



[Steffen Hepp](#), July 2021

Why follow Topten criteria?

- Topten.eu/pro (www.topten.eu/pro) is a European web portal helping buyers, professionals, public procurers and large buyers to find the most energy efficient products available in Europe. The products are selected and updated continuously, according to their high energy and environmental performances, independently from the manufacturers.
- The Topten criteria below can be inserted directly into tendering documents.
- All storage refrigerators and freezers displayed on www.topten.eu meet the criteria contained in these guidelines. Procurers can therefore use the website to check the availability and assortment of products currently on the market, which meet the **Topten selection criteria**.
- Topten.eu/pro links to national partners Topten Pro websites and was developed under the Topten Act project, supported by the European Union through Horizon 2020 programme.

How much can you save?

On www.topten.eu storage refrigerator and freezer cabinets are divided in the following categories:

STORAGE REFRIGERATORS	STORAGE FREEZERS
counter refrigerators	counter freezers
refrigerators 1-door	freezers 1-door
refrigerators 2-doors	freezers 2-doors
refrigerator-freezers	

Considering the models listed on Topten and the following assumptions, it is possible to achieve the savings indicated in the next table.

Assumptions {
 Lifetime expectation: 8 years
 Electricity cost: 0,20 €/kWh

		Volume (litres)	Energy (kWh/year)	Electricity costs (€ in 8 years)	Savings (€ in 8 years)
Storage counter refrigerators	Topten model	198	434	694	53% energy/unit 782 €/unit
	Inefficient model	150	923	1,477	
Storage refrigerators 1-door	Topten model	462	321	514	68% energy/unit 1,104 €/unit
	Inefficient model	450	1,011	1,618	
Storage refrigerators 2-doors	Topten model	1,071	832	1,331	51% energy/unit 1,373 €/unit
	Inefficient model	1,000	1,690	2,704	
Storage counter freezers	Topten model	86	781	1,250	65% energy/unit 2,306 €/unit
	Inefficient model	100	2,222	3,555	
Storage freezers 1-door	Topten model	465	1,540	2,464	48% energy/unit 2,261 €/unit
	Inefficient model	450	2,953	4,725	
Storage freezers 2-doors	Topten model	1,167	2,887	4,619	44% energy/unit 3,574 €/unit
	Inefficient model	1,000	5,121	8,194	
Storage refrigerator-freezers	Topten model	513	1,234	1,974	51% energy/unit 2,026 €/unit
	Inefficient model	450	2,500	4,000	

Comparing models with similar net capacity, the Topten models allow electricity savings, in 8 years, from around 780 €/unit, for storage counter refrigerators, to nearly 3600 €/unit for storage freezers 2-doors. Best models on www.topten.eu consume 40% to almost 70% less energy than inefficient models.

Procurement criteria

The following criteria can be inserted directly into tendering documents. The Topten selection criteria and the product lists are updated regularly. The newest versions are always available at www.topten.eu/pro.

SUBJECT: HIGHLY ENERGY-EFFICIENT STORAGE REFRIGERATORS AND FREEZERS

TECHNICAL SPECIFICATIONS

1. Energy class

Storage refrigerators and freezers cabinets must have at least the following energy efficiency class, declared according to European Energy Label.

CATEGORY	ENERGY CLASS
Storage counter refrigerators	A
Storage refrigerators 1-door	A
Storage refrigerators 2-doors	C
Storage counter freezers	B
Storage freezers 1-door	C
Storage freezers 2-doors	C
Storage refrigerator-freezers	D

Verification

Bidders must supply the energy label and technical data according to EU Regulations No. 2015/1094 and No. 2015/1095.

2. Refrigerants

Storage refrigerator and freezer cabinets must use refrigerants with global warming potential of ≤ 3 such as R290 (propane), R600a (isobutane) or R744 (CO₂). This means they are compliant with all coming stages of the EU F-Gas regulation No. 517/2014.

Verification

Bidders must supply the information on refrigerants according to EU regulation No. 2015/1095.

BACKGROUND INFORMATION

According to EU Regulation No. 517/2014 refrigerators and freezers for commercial use (hermetically sealed equipment) that contain HCFs with global warming potential of 2500 or more will be banned from 1 January 2020 and those that contain HFCs with global warming potential of 150 or more will be banned from 1 January 2022. Therefore, the refrigerant R404A which has a global warming potential of 3990 will be banned in refrigerated cabinets in 2020 and the refrigerant R134a which has a global warming potential of 1430 will be banned in refrigerated cabinets in 2022

All Topten models use the natural refrigerants R290 (propane) or R600a (isobutane) with global warming potential (GWP) of 3 or less.



Since 1 July 2016, the EU energy label for professional refrigerated storage cabinets is mandatory. It shows:

- the energy efficiency class;
- the annual electricity consumption in kWh per year;
- the net volume of chilled compartments;
- the net volume of freezer compartments;
- the climate class (3, 4 or 5) together with the associated dry bulb temperature (in °C) and the relative humidity (in %).

Document: EU regulation No. 2015/1094.

On 1 July 2019, the second label became valid, adding classes A+ to A+++.

Energy efficiency class	A+++	A++	A+	A	B	C	D	E	F	G
Energy efficiency index	< 5	5-10	10-15	15-25	25-35	35-50	50-75	75-85	85-95	95-115

Class G products have not been permitted on the market since January 2018. Class F products are banned since 1st July 2019 (with the exemption of heavy-duty products).

NOTES ON IMPLEMENTATION

To increase savings and reduce environmental impact, procurers should evaluate life cycle costs when tendering for storage refrigerators and freezers. Thus, it is advisable to include in the tender a costing exercise - even if simple - for the product life cycle costs.

Example of a breakdown costs table, to be filled in by bidders:

	Information details	Different unit costs in € (excluding tax)	Total cost in € (excluding tax)
Delivery			
Installation			
Use	Energy consumption in kWh/year x n ^o units	Electricity cost: 0,20 €/kWh*	
Maintenance			
Recycling and disposal			

* Example of how use costs can be determined.

** This figure is just an example. The procurer can use the average electricity price paid during the last 2 or 3 years, and also include subscription fee and taxes.

Advice and support

If you would like further assistance in using the information presented here in your own procurement actions or more information on [Topten Pro](#) contact your national Topten team (find it on [Topten.eu](#)).

The European Commission's [Green Public Procurement](#) website contains valuable legal and practical guidance together with procurement criteria for a range of commonly procured products and services.



The elaboration of these procurement guidelines has been supported by funding from WWF Switzerland. The sole responsibility for the content of the Topten procurement guidelines lies with the authors.



Topten ACT has received funding from the [European Union's Horizon 2020 research and innovation programme](#) under grant agreement n°649647. The sole responsibility for the content of the Topten Pro procurement guidelines lies with the authors. It does not necessarily reflect the opinion of the European Union. Neither EASME, nor European Commission and project partners are responsible for any use that may be made of the information contained therein.