

Diesel generator specification template

A specification table for a tender in the DRC

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A neutral template

This document is a general reference template. It describes performance, never a brand, a supplier or a product, and it was not written for any particular tender.

Copy it and adapt it to your tender file. The full explanations, with a worked example of a bidder's answer, are in the guide "Writing a generator specification for a tender in the DRC":

www.mkenergies.com/en/actualites/cahier-des-charges-groupe-electrogene-appel-d-offres

How to use it

- 1 Work out the real load of the site, then add a reserve (for example 25%). Example: a 120 kVA load $\times$ 1.25 = 150 kVA prime power.
- 2 Fill in the "Required value" column. Delete the rows that do not apply to your project.
- 3 The bidder fills in the "Answer" column: "compliant" or "not compliant", with the value from its datasheet.
- 4 Ask for performance, not brands: ask for the make and model of each component in the bid. You then compare values, not names.
- 5 Attach the list of documents to submit (part 3).

1. The project

Buyer and project	
Installation site (city, province)	
Use of the generator (standby, daily power cuts, off-grid site)	
Bid deadline	

2. Specification table

Requirement	Required value	Bidder's answer
Prime power (PRP, ISO 8528-1)	$\geq$ ___ kVA / ___ kW at 0.8 power factor	
Standby power (ESP)	to be stated separately	
Voltage, phases, frequency	380/220 V (or 400/230 V depending on the site), three-phase + neutral, 50 Hz	
Engine speed	1,500 rpm	
Engine: make, model, power in kWm	to be stated	
Alternator: make, model	to be stated	
Cooling	water-cooled / air-cooled	
Version	soundproof / open frame	
Noise level	$\leq$ ___ dBA at ___ m	

Requirement	Required value	Bidder's answer
Dimensions L x W x H and weight	≤ ___ x ___ x ___ cm, ≤ ___ kg	
Fuel tank and runtime	≥ ___ L, ≥ ___ h at ___% load	
Fuel consumption at 100% load	to be stated in L/h	
Controller: functions, make, model	automatic start, mains failure detection (AMF) or by ATS, alarms, fault shutdowns	
Automatic transfer switch (ATS)	included / not included, ___ A	
Output circuit breaker	included, ___ A (≥ rated current)	
Site: altitude, maximum temperature, access	___ m, ___ °C, ___	
Documents	PDF datasheet, manuals, layout drawing, wiring diagram	

3. Documents to submit with the bid

- 1 the full datasheet as a PDF: PRP and ESP, engine, alternator, controller, fuel consumption, noise level, dimensions and weight of the version offered;
- 2 the operation and maintenance manuals;
- 3 a layout drawing: dimensions, clearances, exhaust outlet, power cable connection;
- 4 the electrical wiring diagram;
- 5 the list of routine service parts (filters, belts);
- 6 the lead time and delivery point, and the warranty terms offered by the bidder;
- 7 the services included: installation, commissioning, maintenance.

4. Drafting notes

Prime or standby power. ISO 8528-1 defines prime power (PRP) as available for an unlimited number of hours a year under variable load. Standby power (ESP) is meant for 200 hours a year at most: it does not suit a set that runs every day during power cuts. Require PRP, and ESP stated separately.

Voltage and frequency. The DRC grid runs at 50 Hz, 220 V single-phase and 380 V three-phase. State the altitude and the maximum ambient temperature of the site, and ask for the power available in those conditions.

Noise level. A dBA figure only means something with the distance and the version (soundproof or open frame) it was measured at.

Runtime. Runtime is the tank capacity divided by the hourly fuel consumption. State it in hours, at a given load. For 24 h or more, ask for an external tank and state its capacity.

Automatic start. State which device detects the mains failure: the controller (AMF function) or the automatic transfer switch (ATS). State whether the ATS is included and its rating in amperes. If several sets must run together, ask for synchronisation and load sharing.

Rated current. Current (A) = kVA x 1,000 / ($\sqrt{3}$ x voltage). Example: 150 kVA at 400 V gives about 217 A. This value sizes the cables, the output circuit breaker and the ATS.

Site access. Describe the width of the gate or passage, truck access, the lifting equipment available (crane, forklift) and the type of slab.