HENGSEN REFRIGERATION · TECHNICAL CENTER

R448A, R449A, R290 and CO_2 in commercial rooms

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Applies to	Condensing units for rooms up to ~30 m³	Issued by	Engineering Department

1. Where each refrigerant fits

Refrigerant	GWP	Charge limit	Best for
R448A / R449A	≈ 1 273–1 397	legal under F-gas for small charges until the 2030s	drop-in HFO blends for existing units; no licence change for HFC installers
R290 (propane)	3	~500 g per circuit (EN 378)	future-proof small rooms; needs spark-free build and trained installers
CO_2 (R744)	1	unlimited	larger engine rooms and supermarket-scale plants

2. What the rules mean for a small cold room

For pre-assembled rooms up to roughly 30 m³, R448A/R449A units remain the pragmatic EU answer today, and R290 units are the pragmatic answer for buyers who want to be future-proof: no F-gas quota, no phase-down exposure, and a better COP in warm climates — as long as the charge limit fits the room.

3. Cost effect

Refrigerant choice moves the equipment price by roughly ±5 % at this size class. The bigger cost lever is the refrigerant you will need in five years: a unit sold today on a high-GWP blend is a re-gas liability under the phase-down.