

For fresh fruit and vegetables – cold storage in Namibia

GEA Refrigeration Africa, a subsidiary of GEA Refrigeration Technologies, has designed and implemented – on behalf of the Dutch company Cool Fresh International BV – the refrigeration system for a fruit and vegetable storage facility in Aussenkehr, Namibia. This cold-storage warehouse is designed to store products such as grapes, melons, dates, and tomatoes cultivated as part of the Orange River Irrigation Project of the government Agricultural Ministry, and marketed by Cool Fresh. The new storage complex comprises four halls, including sorting, consignment, and receipt of incoming fruit and vegetables through a cooling tunnel.



GEA Grasso piston compressors assure that the fruit and vegetables in this cold-storage facility in Namibia will be exported in fresh condition.

One GEA Grasso G3.10 and two GEA Grasso G4.10 ammonia piston compressors provide the refrigeration needed for the halls. The compressors here operate in single-stage mode to cool the halls, as required, to the required temperature of approx. 0 °C to a maximum of 12 °C. At hall temperatures around 8 °C, they offer cooling duty up to 180 kW (G3.10) and 240 kW (G4.10). In the halls, cooling is provided by zinc-plated evaporators via air flow. During design work, the GEA project team took into account that the humidity in the hall would remain high enough to prevent drying of the fruit and vegetables.

Storage of the dates, which are harvested from February to April, required a special solution to enable them to be frozen in one of the halls until export. The refrigeration system operates in two stages (-28 °C/0 °C and 0 °C/+35 °C) to achieve the required temperature of -20 °C in the hall. Special valve units enable switch-over between the two-stage mode for freezing and the single-stage cooling mode.

The concept has proven effective: immediately after the warehouse complex was commissioned in September of 2011, it was required to prove its effectiveness in the African summer. Result: it met expectations with respect to energy efficiency. Not least responsible for these results is the natural refrigerant ammonia, which enables great efficiency in the central refrigeration complex. In addition, ammonia is climate-

friendly – since any ammonia leaks will not contribute either to the greenhouse effect or to depletion of the ozone layer. But this was not the only aspect speaking for GEA. Loek Schoenmaker, CFO of Cool Fresh International, said, “We awarded the contract to GEA because this company – like our firm – operates in accordance with international standards.”