

INCREASED CAPACITY CASE STUDY

Sugar Refinery, Sweden

As one of the largest sugar producers in Europe, this refinery had increased production at its plant in Sweden by 40 percent over a three-year period. At the increased rate of 85 tph, the cooling capacity of the plant's existing equipment was no longer adequate and the temperature of outgoing sugar had increased to between 35°C and 40°C. This was a problem because the recommended temperature to prevent caking and maintain product quality in storage is below 30°C.

The engineers at the refinery carried out a two-week on-site pilot test of the Solex sugar cooling unit. On the basis of the positive trials, acquisition of the equipment was fully endorsed by the management, engineering and maintenance departments, and the Solex cooling unit was successfully installed prior to the plant's next sugar campaign.

Outcome

The refinery reported that the equipment was compact and easy to install and the investment cost of the installation was lower than that of fluid bed and drum coolers. At full capacity, the equipment met or exceeded the expected cooling duty, cooling 85 tph of sugar from 40°C to 25°C with cooling water supplied at 16°C. Sugar quality was improved on two fronts: one, the product had a lower relative humidity than theoretically expected; and two, the Solex cooling unit minimized abrasion of the product resulting in less sugar dust and a higher quality product. With few moving parts and easy operation, maintenance costs were extremely low. With less than 100 kW installed electrical power (including new conveyors, dry cooler fans, and cooling water pump associated with the cooler installation), operating costs were also low. Given that the equipment did not use any air in contact with the sugar, there were no emissions and no sugar sent to remelting.