

SEALING OUT-DOOR STORAGE AND FUMIGATION FACILITIES USING PLASTIC-SHEETING.

Tom DeBRUIN

*Haogenplast Ltd., Kibbutz Haogen 42880, Israel.
Fax: 9729620642*

Plastic sheeting used for modified atmosphere facilities for storing grain, dried fruits and bee-hives are discussed in this presentation. The following aspects in production of plastic membranes and in ensuring sufficiently sealed facilities are reviewed:

Prerequisites for sealed out-door facilities. The plastic membrane of the structure should have sufficient physical strength, low gas permeability rate, and good resistance to UV. The structure should be sufficiently gas-tight either to allow metabolic processes to create the desired atmospheric composition, or to enable modification of the atmosphere by addition of gas. Manufacturers should perform leak tests before the units leave the production plant.

On-the-spot sealing is employed for very large units only, such as bunkers for grain storage of over 10,000 tonnes, or sealed storage of dried fruits containing tens of tonnes, since sealing techniques demand high professional skills, including use of hot air guns and adhesives. Where grain is stored in units of up to 1,000 tonnes, sealing of liner sections with easily locked plastic tongue and groove zippers is convenient.

Prefabricated units have the advantage of lower price (standard manufacturing process) and ease in operation. On-the-spot-installations are less cost effective and testing is rather complicated. Also, each time a fresh commodity is stored, a new sealing process is required.

Tests used for determining air tightness include physically controlling seams and weldings, inflation and audio control, inflation and measurement of drop in pressure, inflation with colored smoke, and ultra sound.