

TABOREX TA 1133 HD

A chemically-crosslinkable HDPE compound for the production of multi-layer pipes for domestic hot and cold water and under floor heating applications. It is designed to achieve best performance in co-extrusion processes.

Description

TABOREX TA 1133 HD is a crosslinkable compound made of Silane grafted ethylene polymer. This graft polymer constitutes together with a Masterbatch containing the crosslinking catalyst a "SIOPLAS-SYSTEM". Pipes, which are produced with the SILON grade TABOREX TA 1133 HD fulfil the requirements of ASTM F876-04a, CSA 137.5-03, EN ISO 15875, BS 7291 and all related standards.

This system allows the compound to be extruded as a normal thermoplastic polymer, which will attain a high level of crosslinking in the processed form. The final product provides all the superior properties associated with crosslinked polyethylene.

Physical Properties:

| Properties | Test method | Units | Typical Value |
|---------------------------|---------------------------|-------------------|---------------|
| Density | DIN 53479/ ASTM D 1505 | g/cm ³ | 0.952 |
| Bulk Density | DIN 53466 | g/cm ³ | 0.57 |
| Melt Flow Index (190/5) | ISO 1133 / ASTM D 1238 | g/10 min | 2,2 |
| Volatile total | ITN-ZP 300CH 3-5-5/d | % | < 0.1 |
| Tensile strength at break | ISO R 527 | MPa | 24,5 |
| Elongation at break | ISO R 527 | % | 230 |
| Gel Content | EN 579 | % | 69 |

Processing of TABOREX TA 1133 HD:

Extruder:



TABOREX TA 1133 HD can be processed on most modern thermoplastic extruders without problems. Particularly if the available screw is designed for Polyethylene excellent products can be expected.

Screw Parameters:

L/D: >25
Compression ratio: 3 – 2.5 : 1

Temperature Profile:

| | |
|--------|---------------|
| Zone 1 | 160°C - 170°C |
| Zone 2 | 170°C - 180°C |
| Zone 3 | 170°C - 190°C |
| Zone 4 | 170°C - 190°C |
| Head | 200°C - 210°C |
| Die | 190°C - 220°C |
| Screw* | 70°C - 90 °C |

* The thermostatic control of the screw improves processing results.

Recommendations for optimal extrusion conditions:

- Pre-drying of Catalyst Masterbatch and Colour Masterbatch about 2 hours at 80°C - 90°C, preferably with dried air.
- Material preconditioning to ambient temperature before the package opening is necessary, to avoid moisture condensation on the pellet surface.
- Use screw suitable for PE-HD (3-zone or barrier screw).
- Head and tools should be designated allowing streamlined flow avoiding stagnation of the material.
- In case of line stop longer than 10 - 15 minutes: Before restarting purge with standard HDPE (MFI: 0.3g/10 min.)

Crosslinking Cure:

The following methods are recommended:



Adding more than value

SILON

- By immersion in hot water at 80°C - 95°C
- Exposure to low pressure steam

The period required to obtain the final gel content depends on the wall thickness and the temperature. The exposure times are in the range of 4 - 8 hours.

Storage:

TABOREX TA 1133 HD has a shelf life of nine months from the production date printed on the packaging. The packages should be opened only before processing; exposure to direct sun radiation must be avoided. After opening the bags the product must be used within 3 - 4 hours.

Packaging:

Graft Polymer:

- moisture resistant multilayer bags containing 25 kg
- boxes of 500 kg containing a moisture resistant multilayer lining sealed under vacuum