

4244/4244-A/4244-E/4244B

LOW SHRINKAGE SILANE CROSS-LINKABLE PE COMPOUND

FOR 1KV AND BELOW CABLE & WIRE

Description

Grade 4244/4244-A/4244-E/4244B is suitable for 1kv and below low voltage cable, it is composed by 95% silane crosslinkable low density polyethylene (compound A) and 5% catalyst (compound B).

The main raw materials of the product are imported high-quality LDPE and silane crosslink agent, the product's major characteristics are

- Extremely low heat shrinkage rate, which can solve the disqualified cable shrinkage problem in the past.
- Cables made from the product have excellent performance in smooth cable surface, high extrusion speed and production efficiency.
- The processing temperatures for the product are comparatively low, which can save the energy and reduce the cost.

Standard

After crosslinked in the tepid water, the cable made from our product grade 4244/4244-A/4244-E/4244B can comply with the standard of IEC60502-2004, GB/T12706-2002.

Main Properties & Typical Values

| Test items | Test method | Unit | Standard | Typical value |
|--|-------------|------|-----------------------|----------------------|
| Tensile strength | GB/T1040.3 | MPa | ≥16.0 | 23.0 |
| Elongation at break | GB/T1040.3 | % | ≥350 | 580 |
| Heat ageing properties (Test temperature 135°C, 168hr) | GB/T8815 | % | ±20 | 6.0 |
| Maximum tensile strength change | | | | |
| Maximum elongation at break change | | | | |
| Heat elongation (200±3)°C x15minx0.2MPa) | GB/T2951 | % | ≤100 | 46 |
| Maximum elongation change under load | | | | |
| Maximum permanent elongation change after cooled | | | | |
| Impact brittle temp. (-76°C) | GB/T5470 | --- | ≤15/30 | Pass* |
| Dielectric Strength | GB/T1408.1 | MV/m | ≥30 | 35* |
| Dielectric loss factor 50Hz, 20°C | GB/T1409 | --- | ≤5.0×10 ⁻⁴ | 3×10 ⁻⁴ * |
| Dielectric constant 50Hz, 20°C | GB/T1409 | --- | ≤2.35 | 2.25* |
| Volume resistance (20°C) | GB/T1410 | Ω.m | ≥1.0×10 ¹⁴ | 5×10 ¹⁴ * |
| Heat-Shrinkage test (130°C, 1hr) The highest shrinkage rate allowed | Q/GHPX112 | % | ≤4 | 2 |

Typical values were tested on the 1mm sample strip by squeezing film extrusion after mixing compound of A & B (at percentage of 95:5) and be boiled in 90°C water for four hours.

*Especially, these typical values were tested by press moulding sample under the condition of 180±2 °C, 15min, and pressure over 15Mpa, then boiled in 90°C water for four hours.

Recommended Processing Technique

1. Extrusion Equipment

Most extruders for PVC and PE suit for 4244/4244-A/4244-E/4244B.

The recommended equipment and processing technique is as following.

| | |
|------------------------------|-------------|
| Ratio of length and diameter | 18—25:1 |
| Diameter | 45—120mm |
| Ratio of compressing | 1.5—3.5 |
| Ratio of elongation | 1:1.0—1:1.5 |
| Filtering mesh | 40/60/40 |

2. Extruder processing temperature and other related settings

Temperature Setting: Specific processing temperature should be based on different equipment and pressing conditions, reference settings are as following:

| Feeding Section (°C) | Compression Section (°C) | Measurement Section (°C) | Die head and Mould (°C) |
|-------------------------|-----------------------------|-----------------------------|----------------------------|
| 130~155 | 155~170 | 170~180 | 180~200 |

Die head setting: Tubing extrusion style is recommended

3. Crosslink

After extrusion and cooling, the cable can be cross linked by immersed in hot water (90°C) or exposed in low pressure vapour. The time required for crosslink is based on the thickness of the insulation and the coil size, the thicker the insulation and the greater the coil size, the longer the crosslink time required. The crosslink time can be calculated according to the equation of 4hr/mm for 90°C.

Please contact our customer service for more technical service.