EPDM Steam 90P

EPDM-STM90P-01 · EPDM · 90 Shore A · Peroxide cure · −45 °C to +250 °C

HPHT

Steam to 250 °C, in a seal you can still afford.

READ THE CODE EPDM-STM90P-01 = EPDM, STM duty (steam and hot water), 90 Shore A, P for peroxide cure, recipe 01.

DEVELOPMENT TARGETS: NOT MEASURED RESULTS. Every value on this sheet is a design target or a release limit for development. Replace targets with measured typical values (mean of production lots, with the number of lots) and the test report reference before external use.

Description

A 90 Shore A EPDM for saturated steam and hot water to 250 °C: geothermal wells and plants, steam injection and SAGD, and high-pressure steam valves. Not for oils, and not where hot air or oxygen is present.

Applications

- Geothermal wellheads and valves
- Steam injection and SAGD wellheads
- High-pressure steam valves in power and process plants
- Geothermal binary plant equipment

POLYMER	EPDM (ethylene propylene diene)
DUTY	STM: steam and hot water
CHEMISTRY	Peroxide-cured EPDM, high-temperature steam grade
CURE	Peroxide
HARDNESS	90 Shore A nominal
DESIGN RANGE	−45 °C to +250 °C
COLOUR	Black
PORTFOLIO	Wave 2, probable
POLE MARKS	HPHT

Properties: targets and release limits

PROPERTY	TARGET	RELEASE LIMIT	UNIT	TEST METHOD
Hardness	**90**	**85 to 95**	Shore A	ASTM D2240 / ISO 48-4, 1 s
Specific gravity	**1.15**	**±0.02 of approved value**	—	ASTM D297 / ISO 2781
Tensile strength	**14**	**min 11**	MPa	ASTM D412 die C / ISO 37 type 2
Elongation at break	**120**	**min 90**	%	ASTM D412 die C / ISO 37 type 2
Compression set, 70 h at 200 °C	**30**	**max 40**	%	ASTM D395 method B, button
TR10	**−45**	**max −40**	°C	ASTM D1329 / ISO 2921
Saturated steam, 168 h at 250 °C, hardness change	**−5**	**−10 to +5**	points	In-house autoclave method
Saturated steam, 168 h at 250 °C, volume change	**+3**	**max +8**	%	In-house autoclave method
Saturated steam, 168 h at 250 °C, tensile change	**−25**	**max −40**	%	In-house autoclave method

Qualification plan

The grade code says what this compound is designed for. This table says what it has passed: a duty is claimed only once its report is on file. Evidence for the STM duty: Steam or hot-water ageing at the rated temperature.

TEST	STANDARD OR METHOD	CONDITIONS	STATUS
Steam ageing	In-house autoclave method, published with results	168 h and 500 h at 230 °C and 250 °C	Planned
Geothermal brine ageing	In-house method	Brine with H2S and CO2 at rated temperature	Planned
Steam and CO2 decompression (optional)	ISO 23936-2 Annex B adapted	Per project	Planned

Processing

Press cure guide: 10 min at 175 °C. Post-cure guide: 2 h at 150 °C (optional).

Storage and lot record

Target 6 months at or below 25 °C. Every lot ships with its Passport: results against these limits, the rheometer cure curve and the raw-material lots.

How to read this sheet

Target: the value the compound is designed to reach, used until measured data exists.

Typical: the mean of measured production lots, stated with the number of lots. Replaces the target.

Release limit: the window every lot is tested against. A lot outside it does not ship.

Method: the standard, specimen and conditions behind each number.

Supply

Supplied as uncured compound by the batch, with the lot Passport. Test slabs, buttons and trial quantities are available for qualification.

Tell us the fluid, the temperature range, the pressure and the seal design, and we will say whether this grade fits, and which one does if it does not.

Pole marks on this grade

HPHT: designed for high-pressure duty (rapid gas decompression, extrusion or sour gas at pressure) at 160 °C or above. Neither term has an industry-wide definition. These are Pascalor rules, and every datasheet states the actual numbers.