NR BOP 70S

NR-BOP70S-01 · NR · 70 Shore A · Sulfur cure · −30 °C to +100 °C

HPLT

The most elastic rubber we make, for water-based mud and cold rigs.

READ THE CODE NR-BOP70S-01 = NR, BOP duty (blowout preventers), 70 Shore A, S for sulfur 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 70 Shore A natural rubber for annular BOP packing units in water-based mud and cold conditions: the highest resilience of any compound in the range, high tear strength, and flexibility to −30 °C.

POLYMER	NR (natural rubber)
DUTY	BOP: Pressure control
CHEMISTRY	Sulfur-cured natural rubber, high resilience
CURE	Sulfur
HARDNESS	70 Shore A nominal
DESIGN RANGE	−30 °C to +100 °C
COLOUR	Black
PORTFOLIO	Wave 2, probable
POLE MARKS	HPLT

Applications

- Annular BOP packing units for water-based mud
- Land and offshore rigs in cold climates
- Mud pump rod packers and pistons (water-based)
- Wiper and cement plugs

Properties: targets and release limits

PROPERTY	TARGET	RELEASE LIMIT	UNIT	TEST METHOD
Hardness	**70**	**65 to 75**	Shore A	ASTM D2240 / ISO 48-4, 1 s
Tensile strength	**25**	**min 22**	MPa	ASTM D412 die C / ISO 37 type 2
Elongation at break	**600**	**min 500**	%	ASTM D412 die C / ISO 37 type 2
Tear strength	**70**	**min 55**	kN/m	ASTM D624 die C
Rebound resilience	**60**	**min 55**	%	ISO 4662
Compression set, 22 h at 70 °C	**20**	**max 30**	%	ASTM D395 method B, button
TR10	**−55**	**max −50**	°C	ASTM D1329 / ISO 2921
Heat ageing 70 h at 100 °C, tensile change	**−15**	**max −25**	%	ASTM D573 / ISO 188

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 BOP duty: Compound data in the named drilling fluids; element testing to API 16A is done on the preventer.

TEST	STANDARD OR METHOD	CONDITIONS	STATUS
Water-based mud ageing	In-house method, published with results	At 90 °C	Planned
Closure testing	API 16A, with an OEM or rebuilder	On the packing unit design	Planned
Low-temperature flexibility	ASTM D2137 brittleness and TR10	Reported, no limit yet	Planned

Processing

Press cure guide: 15 min at 150 °C (large elements: by thermocouple data).

Storage and lot record

Target 3 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

HPLT: designed to seal under pressure at −30 °C or below. Neither term has an industry-wide definition. These are Pascalor rules, and every datasheet states the actual numbers.