NBR Stator 75S

NBR-STAT75S-01 · NBR · 75 Shore A · Sulfur cure · −10 °C to +120 °C

NO POLE MARK

The rubber that turns mud into torque.

READ THE CODE NBR-STAT75S-01 = NBR, STAT duty (stators), 75 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 75 Shore A NBR for mud motor and progressing cavity pump stators: low heat build-up, high tear and fatigue resistance and a strong bond to the steel tube, in oil-based and water-based fluids to about 120 °C.

POLYMER	NBR (nitrile)
DUTY	STAT: stators
CHEMISTRY	Sulfur-cured nitrile, stator grade
CURE	Sulfur
HARDNESS	75 Shore A nominal
DESIGN RANGE	−10 °C to +120 °C
COLOUR	Black
PORTFOLIO	Wave 3, probable
POLE MARKS	None

Applications

- Positive displacement mud motor stators
- Progressing cavity pump stators for artificial lift
- Transfer pump stators for crude and slurries

Properties: targets and release limits

PROPERTY	TARGET	RELEASE LIMIT	UNIT	TEST METHOD
Hardness	**75**	**72 to 78**	Shore A	ASTM D2240 / ISO 48-4, 1 s
Tensile strength	**20**	**min 17**	MPa	ASTM D412 die C / ISO 37 type 2
Elongation at break	**450**	**min 350**	%	ASTM D412 die C / ISO 37 type 2
Tear strength	**50**	**min 40**	kN/m	ASTM D624 die C
Heat build-up (Goodrich flexometer)	**20**	**max 28**	°C	ASTM D623 method A
Bond to steel	**9**	**min 7, rubber failure**	kN/m	ASTM D429 method B (90° peel)
IRM 903, 70 h at 100 °C, volume change	**+5**	**max +10**	%	ASTM D471 / ISO 1817

Typical values are indicative and are not a warranty. Targets are design values, not measured results. The user is responsible for confirming suitability in the actual application. Pascalor · Compounds with a paper trail.

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 STAT duty: Swell in the drilling fluid, heat build-up and bond to steel.

TEST	STANDARD OR METHOD	CONDITIONS	STATUS
Mud ageing	In-house method, published with results	Oil-based, synthetic and water-based mud at 120 °C	Planned
Dynamic fatigue	ASTM D623 and flex testing	Before and after ageing	Planned
Power-section test	With a motor or PCP maker	On the customer's stator geometry	Planned

Processing

Injection or transfer moulding into the stator tube; cure set by section thickness. Supplied with the rheometer curve for injection settings.

Storage and lot record

Target 2 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

This is a reference or general grade and carries no pole mark. The red HPHT mark is for high-pressure duty at 160 °C or above; the blue HPLT mark is for sealing under pressure at −30 °C or below.

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