20th December 2023

PE100-RC+ QUALITY MATERIAL LIST

Valid until 1st May 2024 [1)]

The PE100+ Association ensures the very highest quality of PE100 materials by continuously monitoring three fundamental properties:

1) Creep Rupture Strength
2) Resistance to Rapid Crack Propagation
3) Stress Crack Resistance

Network engineers have identified that the following properties are crucial for PE100-RC pipes which are used in challenging applications such as the trenchless installation of gas and water distribution networks. In order to get a PE 100-RC material listed as PE100-RC+ the requirements specified in the table below must be met.

Property	Test method	Requirement	Initial qualification	Annual check	Test method	Specimen
Creep Rupture Strength	Pressure test at 20 °C and 12,0 MPa [2)]	≥ 200 h	2 successful test rounds in a row	1/year	ISO 1167	Pipe 110 mm SDR 11
Resistance to Rapid Crack Propagation	Pc S4 at 0 °C [2)]	≥ 10 bar	2 successful test rounds in a row	1/year	ISO 13477	Pipe 110 mm SDR 11
Stress Crack resistance	Accelerated Notch Pipe test ANPT in 2% Nonyl-Phenol-Ethoxylate solution [2)] 80 °C – 9,2 bar	≥ 300 h	2 successful test rounds in a row	1/year	ISO 13479	Pipe 110 mm SDR 11
Stress Crack resistance	Strain Hardening Test (SH) from regrinded pipe [2)]	≥ 53,0 MPA	2 successful test rounds in a row	1/year	ISO 18488	Regrind from pipe 110 mm SDR 11
Stress Crack resistance	Cracked Round Bar Test CRB [3)]	≥ 1,5 x 10^6 cycles	2 successful test rounds in a row	-	ISO 18489	Granules
Stress Crack resistance	Accelerated FNCT test (AFNCT) In 2% Lauramine-Oxide solution 90 °C – 4,0 MPa [3)] alternatively 90 °C – 5,0 MPa	≥ 550 h ≥ 300 h	2 successful test rounds in a row	-	ISO 16770	Granules

1) New PE100-RC materials can be added at any time during the year as soon as these materials pass all the test requirements
2) To be tested as initial material qualification and also annually in each test round
3) Only to be tested as initial material qualification in 2 consecutive test rounds

For further information please contact:
PE100+ Association, P.O.Box 137, NL-7300 AC Apeldoorn, The Netherlands. Mail to: contact@pe100plus.com. The “PE100+ Quality Materials” is also placed on www.pe100plus.com

On behalf of the PE100+ Association, Kiwa Gastec Certification B.V., an independent testing authority in the Netherlands, executes the above test schedule at various independent and internationally respected laboratories.

The following products (manufacturers in alphabetical order)
met the PE 100-RC+ requirements

Product	Manufacturer	Production Country
BorSafe™ HE3490-LS-H (black)	Borealis	Sweden
BorSafe™ HE3492-LS-H (orange)	Borealis	Sweden
BorSafe™ HE3494-LS-HP (blue)	Borealis	Finland
BorSafe™ HE3490-LS-H (black)	Borouge	United Arab Emirates
BorSafe™ HE3490-ELS-H (black)	Borouge	United Arab Emirates
BorSafe™ HE3492-LS-H (orange)	Borouge	United Arab Emirates
ELTEX® TUB 121 N6000 (black)	INEOS O&P	Belgium
Hostalen CRP 100 RESIST CR black	LyondellBasell	Germany
SABIC® Vestolen A RELY 5922R 10000 (black)	SABIC	Germany

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