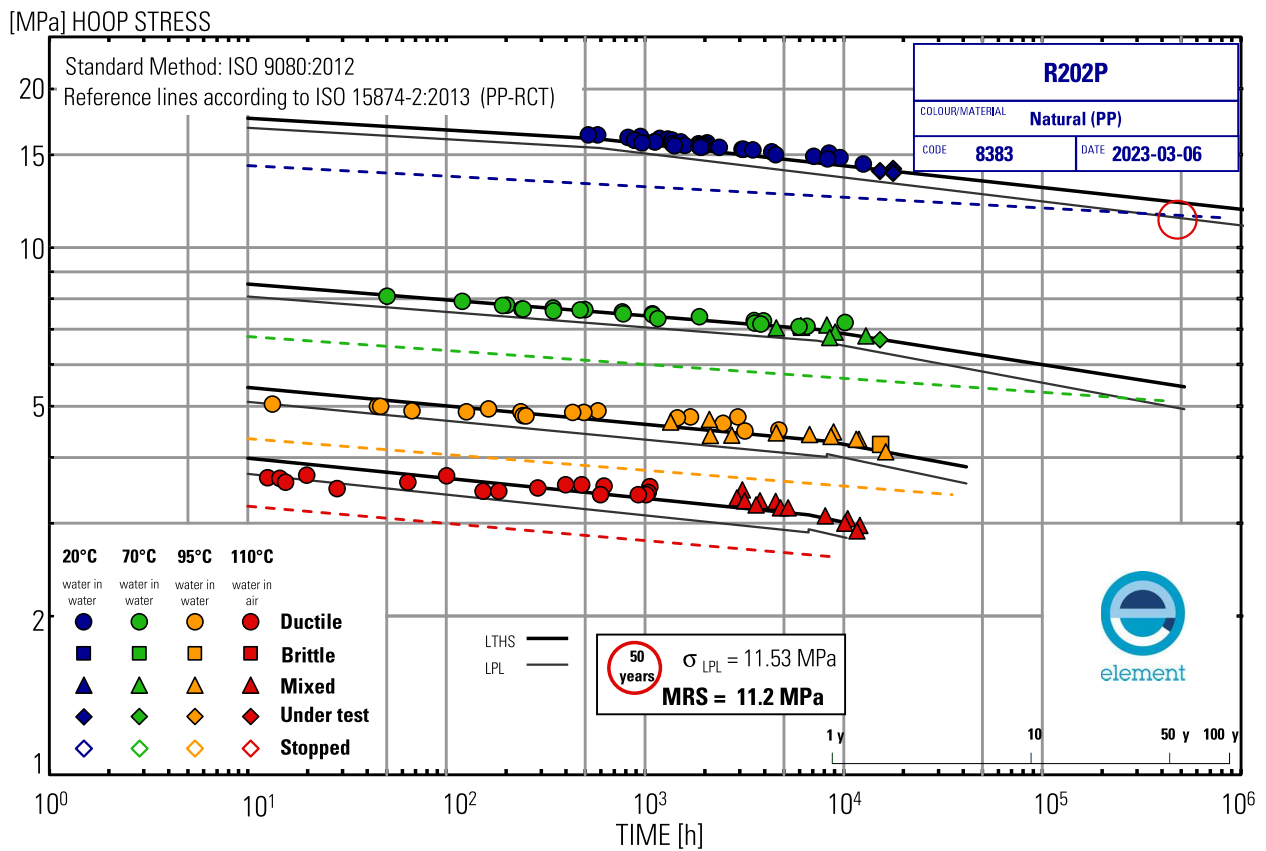


DETERMINATION OF THE LONG-TERM HYDROSTATIC STRENGTH

ISO 9080:2012-evaluation of the natural PP pipe grade R202P from Hyosung Chemical Corporation



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ABSTRACT

The aim of this project was to determine the long term hydrostatic strength of the natural PP pipe grade R202P according to ISO 9080 and then MRS-classify it according to ISO 12162. The ISO 9080-evaluation of the pipe grade gives the following 50 years-strength values at 20 and 70°C.

ISO 9080 STRENGTH VALUES			
T	TIME	σ_{LPL}	σ_{LTHS}
20°C	50 yrs	11.53 MPa	12.25 MPa
70°C	50 yrs	5.00 MPa	5.50 MPa

By its LPL value of 11.53 MPa at 20°C and 50 years the natural PP pipe grade R202P has a minimum required strength (MRS) classification of 11.2 MPa and is thereby designated PP 112 according to ISO 12162. Please observe that this report only covers the ISO 9080-evaluation following MRS classification and material designation. Additional requirements for PP 112 pipe compounds are given in the relevant product standards.

RESULTING DESIGN HOOP STRESSES AND CONFORMITY CHECK WITH APPLICATION CLASSES			
APPLICATION CLASS [ISO 10508]	σ_{LTHS} [R202P]	ISO 15874-2 [PP-RCT]	RESULT [PASS/FAIL]
1	4.24 MPa	3.64 MPa	PASS
2	3.66 MPa	3.40 MPa	PASS
4	4.50 MPa	3.67 MPa	PASS
5	3.28 MPa	2.92 MPa	PASS
Cold water (20°C, 50 yrs)	8.75 MPa	8.25 MPa	PASS

²⁾ Table A.2 in ISO 15874-2