ELEMENT TECHNICAL NOTE

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TITLE

HYDROSTATIC PRESSURE TESTING
Hydrostatic pressure testing of pipes and assemblies from the POLO-KLIMA ML5 series from Poloplast GmbH

INTRODUCTION

Element Materials Technology has on behalf of Poloplast GmbH performed hydrostatic pressure testing of pipes and assemblies from the POLO-KLIMA ML5 series with Element codes 7147, 7148, 7152, 7153, 7279, 7280, 7298 and 7299.

EXPERIMENTAL

The hydrostatic pressure testing is performed at Element according to ISO 1167:2006 at 20, 95 and 110°C using deionised water on the inside and water on the outside, except at 110°C where air is used as outside media. The accuracy for temperature[1] and pressure[1] is better than ±1°C and +2/-1% respectively. The measurements of the wall thickness[1] are accurate within ±0.02 mm and the diameter[1] within ±0.1 mm. Detailed information can be found in Appendix B.

RESULT

A total of 18 samples were put on test. The results are only valid for the material with Element codes 7147, 7148, 7152, 7153, 7279, 7280, 7298 and 7299. The test results are summarized below.

TEST CONDITIONS HYDROSTATIC STRENGTH

T	NO. OF SAMPLES	STRESS	REQUIRED TIME	RESULT	ELEMENT CODE
20°C	2 assemblies	16.0 MPa	1 h	>1 h	7279, 7280
95°C	2 assemblies	3.5 MPa	1 000 h	>1 000 h	7279, 7280
110°C	4 assemblies	1.9 MPa	8 760 h	>8 760 h	7152, 7153, 7279, 7280
110°C	6 pipes	1.9 MPa	8 760 h	>8 760 h	7298, 7299
110°C	4 assemblies	2.6 MPa	8 760 h	1 924 h*	7147, 7148

* The assemblies were started at 2.6 MPa instead of 1.9 MPa and the result is disregarded.

Written by	Reviewed by	Approved by
Mattias HAGMAN, JUNIOR PROJECT MANAGER	Nataliya TAUNLEY, PROJECT MANAGER	Jarno HASSINEN, OPERATIONS MANAGER

1) The expanded uncertainty of measurement has been calculated as the standard uncertainty of measurement multiplied by the coverage factor K=2, which for a normal distribution corresponds to a coverage probability of approximately 95%. The standard uncertainty of measurement has been determined in accordance with EA Publication EA-4/02 and is documented at Element.

element

Element Materials Technology
Plastic Pipes
Studsvik 3 · SE-611 99 TYSTBERGA · SWEDEN
P +46 (0)13 16 90 00 · F +46 (0)155 26 31 25
info.se@element.com · www.element.com