

Declaration of Performance

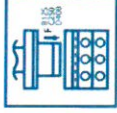
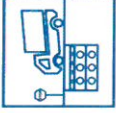
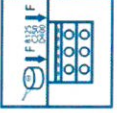
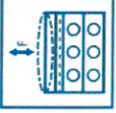
No.: 18/0734

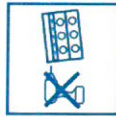
Pursuant to Annex III of (EU) Regulation No. 305/2011 of the European Parliament and of the Council of 9 March 2011
amended by the delegated (EU) Regulation No. 574/2014 of the Commission of 21 February 2014

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| 1. Identification code of the product type: | Manholes made of polycarbonate (PC)
CO 400 to CO 2200 with a cover in accordance
with EN 124 (B125, C250, D400) |
| 2. Purpose of use: | Polycarbonate manholes for underground network
access installed under manhole covers according
to the required load classes in accordance with EN
124 (B125, C250, D400) |
| 3. Manufacturer: | Langmatz GmbH
Am Gschwend 10
82467 Garmisch-Partenkirchen
Germany |
| 4. Authorised representative: | / |
| 5. Assessment and verification of constancy of performance | AVCP system 4 (self-monitoring)
AVCP System 2+ voluntary basis (external
monitoring by a notified certification body) |
| 6. Basis of the Declaration of Performance based on a Technical Assessment: | EAD no.: 340225-00-1109
ETA 18/0734

Notified body: (Notified body no.: 0770)
Kiwa GmbH, MPA Berlin-Brandenburg |

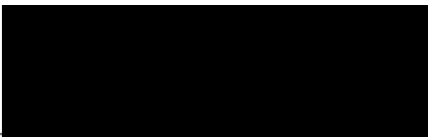
7. Declared performance (Technical Assessment Document ETA 18/0734)

Essential characteristic	Description	Performance/test values (Minimum requirement)	
Load capacity test on stand-alone overall system: Load case 1: on the system centre Load case 2: in the case of multiple covers following load case 1 in a fixed position less favourable for the system	 Load capacity test on a stand-alone overall system with the associated cover in accordance with EN 124-1 as well as with a maximum number of unclosed duct openings without reinforcing elements.	B125 $\geq$ 125 kN, passed C250 $\geq$ 250 kN, passed D400 $\geq$ 400 kN, passed	✓
Shear load test	 The smaller, less favourable side of the test specimen must be tested. Shearing of the cover from the body is tested. This allows extreme braking on the cover to be simulated	$\geq$ 30 kN (value to be declared)	✓
Load capacity after installation Load case 1: static load on the less favourable (longer) side. Load case 2: central static load on the overall system. Load case 3: central static load until failure of the overall system	 The test must be carried out on a built-in, modular or one-piece overall system, including the associated cover, in accordance with EN 124-1 and with a maximum number of unclosed duct openings without reinforcing elements.	Load case 01: $\geq$ 300 kN – 10 hours, passed Load case 02: B125 $\geq$ 125 kN, passed Load case 02: C250 $\geq$ 250 kN, passed Load case 02: D400 $\geq$ 400 kN, passed Load case 03: $\geq$ 500 kN (value to be declared)	✓
Dynamic load after installation Load case 1: static load on the less favourable (longer) side. Load case 2: central static load on the overall system. Load case 3: central static load until failure of the overall system	 The test must be carried out on a built-in, modular or one-piece overall system, including the associated cover, in accordance with EN 124-1 and with a maximum number of unclosed duct openings without reinforcing elements.	Load case 01: sine wave vibration 1 kN to 8.3 kN at 500,000 load cycles, passed Load case 02: sine wave vibration 1 kN to 8.3 kN at 500,000 load cycles, passed Load case 03: $\geq$ 500 kN (value to be declared)	✓

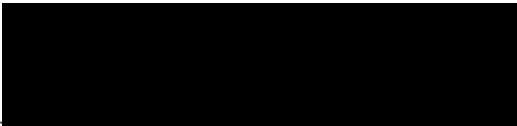
Essential characteristic	Description	Performance/test values (values to be declared)	
Mechanical strength (material) Impact strength Flexural strength Elongation at flexural strength Tensile strength	 Charpy impact properties (EN ISO 179-1) Flexural properties (EN ISO 178) Tensile properties (EN ISO 527-1 to -5)	50,9 KJ/m ² to N1 86,9 MPa to 103,7 MPa 5,3% to 6,4% 56,0 MPa to 69,0 MPa	✓
Mechanical strength after thermal load (material)	 Mechanical strength tests are carried out after defined temperature changes in accordance with EN 60068-2-14	Strength reduction < 8 % Deviations in elongations < 7 %	✓
Chemical resistance (material)	 Mechanical strength tests The material must be stable after storage in liquid chemicals e.g. storage in mineral oil, petroleum (24 h), lime water (7 days), etc.	Strength reduction < 7 % Deviations in elongations < 7 %	✓
UV resistance (material)	 Mechanical strength tests Use a procedure with the "narrow band" irradiance The test duration is defined as 800 hours	Strength reduction < 8 % Deviations in elongations < 7 %	✓
LCA results in relation to 1 kg of processing material	 LCA in accordance with EN ISO 14040 and EN ISO 14044	Polycarbonate 4.69E-01 kg CO ₂ -Eq Polypropylene 2.38E-01 kg CO ₂ -Eq Steel 2.50E + 00 kg CO ₂ -Eq	✓
Fire behaviour	 The polycarbonate manhole systems are tested with the appropriate test methods for the respective fire protection class in order to be classified according to EN 13501-1 in connection with the delegated Regulation 2016/364	"E" normally flammable	✓
Operational safety	 The dust exposure (inhalation exposure) resulting from mechanical processing, e.g. drilling of pipe entries, is tested in a critical polycarbonate manhole	"0" no dust and environmental emissions The result is a complete breakout of the predetermined breaking point without exposures.	✓

The performance of the above product corresponds to the declared performance.
The above-mentioned manufacturer is solely responsible for preparing the declaration of performance in accordance with (EU) Regulation No. 305/2011.

Garmisch-Partenkirchen, June 5th 2020



CEO
Stephan Wulf



Head of Technical Division
Ludwig Fischer