DEKRA

Test Report

2250938.01-INC

Applicant	:	Tegon GmbH & Co. KG Hertzstraße 3 27367 Sottrum Germany
Application date	:	27 October 2020
Order number	:	2250938.00-INC
Product	:	Empty enclosure
Trademark	:	Tegon
Type(s)	:	FE-GON-XL

Arnhem, 29 October 2020

Manufacturer/ Production site:		Tekpan Teknik Elk. Kumanda Pano San. Ve Turizm Ticaret Ltd. Sti. Istiklal Mh. 17.Sk. No:8 Ulucak-Kemalpasa Izmir, Turkey
Subject	:	Degree of protection provided by enclosure, IP65
Test requirements	:	IEC 60529:1989 + A1:1999 EN 60529:1991 + A1:2000
Remarks:	:	Date of performance of tests: 2013 (see general notes on tests in the report)
Conclusion	:	The tested sample complies with the specified requirements
Tested by	:	A.A.P.M. van Vught
Checked by	:	R. Verhagen

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1 Subject

Degree of protection provided by enclosure.

Product information

Trademark	:	Tegon
Type	:	FE-GON-XL
Dimensions	:	Height: 2100 mm
		Width: 800 mm
		Depth: 600 mm
Material	:	Sheet steel
Number of samples tested	:	1

2 Tested Ratings

Degree of protection	:	IP65

3 Object identification

4 Summary of type tests

- Verification of the degree of protection IP6X
- Verification of the degree of protection IPX5

5 General Items

Location of the tests

All tests were carried out at the DEKRA Certification laboratory in Arnhem, The Netherlands.

Tests were carried out by

A.A.P.M. van Vught DEKRA Certification B.V., Arnhem, The Netherlands.

Manufacturer's representative(s) during tests

G. Tigilsel Tekpan Teknik Elk. Kumanda Pano San. Ve Turizm Ticaret Ltd. Sti., Izmir, Turkey

The tests were supervised by

C.C. Burger DEKRA Certification B.V., Arnhem, The Netherlands

General notes on tests

The tests were conducted in 2013 under project number 215585600 and the results were taken over from Dekra Test Report 2155856.01-INC issued on 30 October 2013. As per declaration from the manufacturer the FE-GON-XL enclosure is fully identical to and produced in the same factory as the originally tested TEOS enclosure.

The conclusion and results stated in this report are based on a non-recurrent examination of the sample(s) provided by the initial applicant.

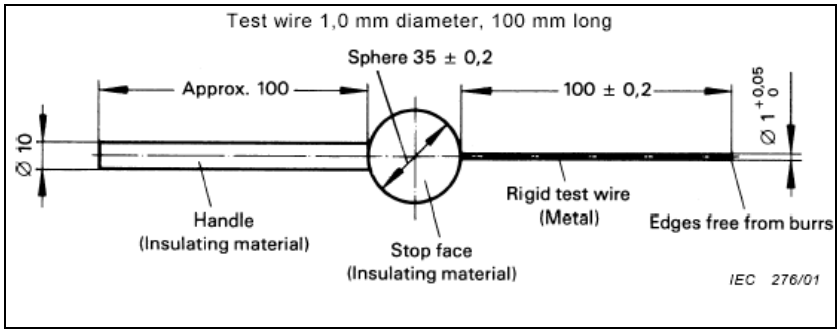
6 Description of the tests

6.1 Test for IP6X (the first numeral 6)

Protection against access to hazardous parts

Performance of the test:

The access probe as shown in figure on this page was pushed against any openings of the enclosure with a force of 1N ± 10%



Pass criteria:

The protection is satisfactory if the access probe specified does not penetrate and adequate clearance is kept between the access probe and hazardous parts.

Test results:

The full diameter of the access probe did not penetrate through an opening of the enclosure and adequate clearance was kept.

The tested sample passed the test and complies with the specified requirements.

6.2 Test for IP6X (the first numeral 6)

Protection against solid foreign objects:

Performance of the test:

The test was made using a dust chamber incorporating the basic principles shown in figure 2 of the standard EN/IEC 60529 in which talcum powder was maintained in suspension.
The talcum powder used is able to pass through a square-meshed sieve with a nominal wire diameter of 50 μm and a nominal width of a gap between wires of 75 μm.
The amount of talcum powder used is 2 kg per cubic meter of the test chamber.

The enclosure shall be deemed category 1, whether reductions in pressure below the atmospheric pressure are present or not.

The enclosure under test was supported inside the test chamber and the pressure inside the enclosure was maintained below the surrounding atmospheric pressure by a vacuum pump.
The suction connection was made to a hole specially provided for this test. This hole was in the vicinity of the vulnerable parts.

The object of the test was to draw into the enclosure, by means of depression, a volume of air 80 times the volume of the sample enclosure tested without exceeding the extraction rate of 60 volumes per hour.
The depression did not exceed 2 kPa (20 mbar) on the manometer.

The duration of the test was 8 hours.

Pass criteria:

The protection is satisfactory if no deposit of dust is observable inside the enclosure at the end of the test.

Test results:

After the test there was no dust found inside the tested sample.

The tested sample passed the test and complies with the specified requirements.

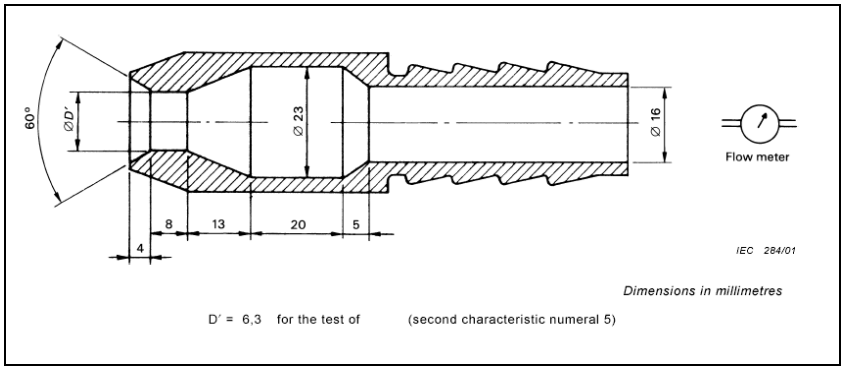
6.3 Test for IPX5 (the second numeral 5)

Protection against water jets

Performance of the test:

The test was made by spraying the enclosure from all practicable directions with a stream of water from a standard test nozzle as shown in figure on this page
The conditions to be observed are as follows:
– internal diameter of the nozzle: 6,3 mm;
– delivery rate: 12,5 l/min ± 5 %;
– water pressure: to be adjusted to achieve the specified delivery rate;
– core of the substantial stream: circle of approximately 40 mm diameter at 2,5 m distance from nozzle;
– test duration per square meter of enclosure surface area likely to be sprayed: 1 min;
– minimum test duration: 3 min;
– distance from nozzle to enclosure surface: between 2,5 m and 3 m.

The duration of the test was 6,5 minutes.



Pass criteria:

After testing the enclosure shall be inspected for ingress of water.

In general, if any water has entered, it shall not:
- be sufficient to interfere with the correct operation of the equipment or impair safety
- deposit on insulation parts where it could lead to tracking along the creepage distances
- reach live parts or windings not designed to operate when wet
- accumulate near the cable end or enter the cable if any

Test results:

After the test there was no ingress of water.

The tested sample passed the test and complies with the specified requirements.

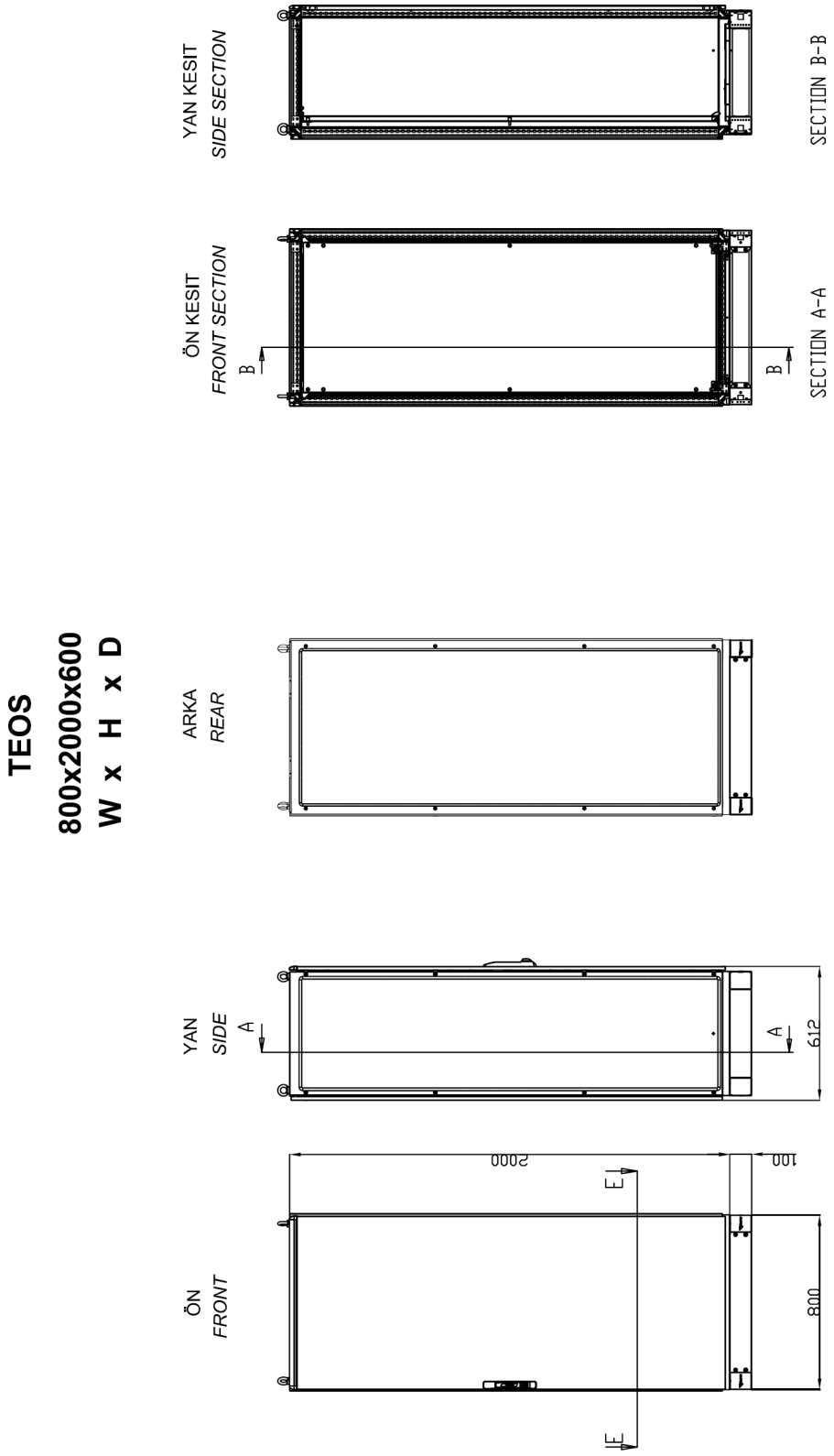
Appendix A – Photos

Photo 1: Inside dust chamber before IP6X test

Photo 2: Inside dust chamber after IP6X test

Photo 3: During IPX5 test

Photo 4: During IPX5 test

Photo 5: After IP65 test

Appendix B – Drawings