TEST CERTIFICATE

Issued to:	Yespan Elektrik Sanayı ve Ticaret Limited Sirketi Aydın Organize Sanayı Bolgesi 2.Cadde No:41 09630 Umurlu Türkiye
For the product:	Empty enclosure for low-voltage switchgear and controlgear assemblies
Trade name:	Yespan
Type/Model:	S Series 800x2000+100x800mm
Ratings:	IP55, IK08, indoor For more details see annex
Manufactured by:	Yespan Elektrik Sanayı ve Ticaret Limited Sirketi Aydın Organize Sanayı Bolgesi 2.Cadde No:41 09630 Umurlu Türkiye
Subject:	Type tests
Requirements:	IEC 62208:2023 Clauses 9.3, 9.4, 9.5, 9.6, 9.7, 9.8, 9.9, 9.12, 9.14, 9.15
Remarks:	-

This Test Certificate is granted on account of an examination by DEKRA, the results of which are laid down in report no. 2296187.01-INC, dated 24 April 2025.

The examination has been carried out on one single specimen of the product, submitted by the manufacturer. The Attestation does not include an assessment of the manufacturer's production. Conformity of his production with the specimen tested by DEKRA is not the responsibility of DEKRA.

Arnhem, 28 April 2025

Number: 2296187.100

DEKRA Certification B.V.

H.L. Schendstok
Certification Manager

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Overview of product evaluation according to IEC 62208:

IEC 62208 Clause	Clause description	Tested ratings	Results
9.3	Marking		Pass
9.4	Static loads	Left side cover: 10 kg Right side cover: 10 kg Mounting plate: 20 kg Swing frame door: 120 kg	Pass
9.5	Lifting		Pass
9.6	Mechanical operation	200 operations (glass door) 200 operations (swing frame door)	Pass
9.7	Axial loads of metal inserts	500 N (M6 PE connection)	Pass
9.8	Degree of protection against external mechanical impacts (IK code)	IK08	Pass
9.9	Degree of protection against access to hazardous parts and against ingress of solid objects and/or water (IP code)	IP55	Pass
9.12	Continuity of the protective circuit	Resistance < 0,1 Ω	Pass
9.14	Resistance to corrosion	Severity test A: indoor	Pass
9.15	Thermal power dissipation capability		Pass

Product details:

Enclosure	Description
S Series 800x2000+100x800mm	Floor standing enclosure (free standing) Dimensions 800 x 2000 x 800 mm (W x H x D) + 100 mm plinth Sheet metal, door with glass plate Internal swing frame and mounting plate at the backside

Applicant	:	Yespan Elektrik Sanayı ve Ticaret Limited Sirketi Aydın Organize Sanayı Bolgesi 2.Cadde No:41 09630 Umurlu Türkiye
Application Date	:	29 January 2025
Order Number	:	2296187.00-INC
Product	:	Empty enclosure for low-voltage switchgear and controlgear assemblies
Trade name	:	Yespan
Type/Model	:	S Series 800x2000+100x800mm

Arnhem, 24 April 2025

Manufacturer Production sites	:	Yespan Elektrik Sanayı ve Ticaret Limited Sirketi Aydın Organize Sanayı Bolgesi 2.Cadde No:41 09630 Umurlu Türkiye
Subject	:	Type tests
Requirements	:	IEC 62208:2023 Clauses 9.3, 9.4, 9.5, 9.6, 9.7, 9.8, 9.9, 9.12, 9.14, 9.15
Conclusion	:	The product complies with the specified requirements
Tested by	:	R. Verhagen
Checked by	:	F. Fu

RVer

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Table of contents

1 Subject

Empty enclosure for low-voltage switchgear and controlgear assemblies

Product information

Trademark	: Yespan
Type	: S Series 800x2000+100x800mm
Type of material	: Sheet metal and glass plate in door
Method of fixing	: Floor standing

2 Tested characteristics

Degree of protection	: IP55
Mechanical impact protection	: IK08
Resistance to corrosion	: indoor
Permissible loads	: 10 kg (left side cover)
	: 10 kg (right side cover)
	: 20 kg (mounting plate)
	: 120 kg (swing frame door)

3 Object identification

Photo 1: S Series 800x2000+100x800mm (1)

Photo 2: S Series 800x2000+100x800mm (2)

The dimensions are stated in the drawings included in this report. For drawings see Appendix B.

4 Summary of type tests

Clause 9.3	Marking
Clause 9.4	Static loads
Clause 9.5	Lifting
Clause 9.6	Mechanical operation
Clause 9.7	Axial loads of metal inserts
Clause 9.8	Degree of protection against external mechanical impacts (IK code)
Clause 9.9	Degree of protection against access to hazardous parts and against ingress of solid objects and/or water (IP code)
Clause 9.12	Continuity of the protective circuit
Clause 9.14	Resistance to corrosion
Clause 9.15	Thermal power dissipation capability

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

R.A.T. Fooy DEKRA Certification B.V., Arnhem, the Netherlands

Manufacturer's representatives during tests

No representatives during tests

The tests in the Arnhem laboratory were supervised by

R. Verhagen DEKRA Certification B.V., Arnhem, the Netherlands

General notes on tests

The tests were performed as per the sequence of tests described in chapter 9.2 of IEC 62208.

The tests were conducted in March to April 2025.

A statement concerning the uncertainty of the measurement systems used for the performed tests is not required by the IEC 62208 standard. The measurements are performed according procedure 2 (simple acceptance) of IEC Guide 115.

The conclusion and results stated in this report are based on a one single specimen of the product, submitted by the manufacturer.

6 Type tests

6.1 Marking

The verification of the marking is done in conformity with IEC 62208, clause 9.3.

The marking was rubbed by hand for 15 s with a piece of cloth soaked in water and then for 15 s with a piece of cloth soaked with petroleum spirit.

After the test the marking was legible to normal or corrected vision without additional magnification.

Result: Pass

6.2 Static loads

The verification of the static loads is done in conformity with IEC 62208, clause 9.4.

The static load test is done on the enclosure fitted with all its required accessories to support the maximum permissible load. The enclosure is tested as in normal use. The enclosure is loaded with a weight of 1,25 times the maximum load as specified by the manufacturer.

The following loads were applied:

Enclosure	Max. permissible load [kg]	Test load [kg]
S Series 800x2000+100x800mm		
- Left side cover	10	12,5
- Right side cover	10	12,5
- Mounting plate	20	25
- Swing frame door	120	150

Table 1: Static loads

The loads are retained for 1 h in the closed position at normal ambient temperature because none of the enclosures, hinges and locks are constructed of insulating material.

After this period, the closed door is opened five times through 90°, resting at least 1 min in the open position during each of the 5 operations.

Pictures of the test can be found in Appendix A.1.

After the test, with the test loads in place, the enclosure shows no cracks or permanent distortions and during the test no deflections which could impair any of its characteristics.

Result: Pass

6.3 Lifting

The verification of the lifting is done in conformity with IEC 62208, clause 9.5.

The enclosure is loaded in the same manner as during the static loads test. The total lifting weight equals 475 kg (empty enclosure (275 kg) + test load (200 kg)).

The enclosure with its door closed, is lifted with the specified lifting means and in the manner defined by the enclosure manufacturer.

The assembly was raised smoothly without jerk in a vertical plane to the height of ≥ 1 m from standstill position, and then lowered in the same manner to a standstill position. This test was conducted in total 3 times.

Then the assembly was raised up and suspended for 30 min at the height of ≥ 1 m.

Then the assembly was raised smoothly without jerk in a vertical plane to the height of ≥ 1 m from standstill position and moved 10 m horizontally at uniform speed, then lowered to a standstill position. Also this test was conducted in total 3 times.

Pictures of the test can be found in Appendix A.2.

After the test, with the test loads in place, the enclosure shows no cracks or permanent distortions and during the test no deflections which could impair any of its characteristics.

Result: Pass

6.4 Mechanical operation

The verification of mechanical operation is done in conformity with IEC 62208, clause 9.6.

Test sequence glass door:
200 x (door lock OPEN – door OPEN – door CLOSED – door lock CLOSED).

Test sequence swing frame door:
200 x (door OPEN – door CLOSED).

The operating conditions of the hinges, door latches, mechanical interlocks associated with the movement of the door have not been impaired. Furthermore, the specified degree of protection has not been impaired.

Result: Pass

6.5 Axial loads of metal inserts

The verification of the axial loads of metal inserts is done in conformity with IEC 62208, clause 9.7.

The test was performed on threaded metal inserts that are provided to retain the mounting plate or switchgear and controlgear supports in place. The test was carried out by applying an axial load for 10 s to representative samples. The enclosure was resting on a supporting platform to allow the application of the load.

The axial load of 500 N was applied on the PE connection (M6) of the roof.

At the end of the test, the insert was still in its original position, there was no sign of movement.

Result: Pass

6.6 Degree of protection against external mechanical impacts (IK code)

The mechanical impact test is performed in conformity with IEC 62208 clause 9.8 and IEC 62262.

The test equipment consists of a test hammer as described in IEC 60068-2-75 suitable for the dimensions of the enclosure. The enclosure was placed on a rigid support as for normal use.

For all tests an impact energy of 5 J corresponding to an IK08 rating was applied. The impact energy was achieved with a 5 J impact hammer of 1,7 kg from a height of 300 mm. The impacts were applied with even distribution over the faces of the enclosure:

- three times to each exposed surface in normal use whose largest dimension is not above 1 m (roof);
- five times to each exposed surface in normal use whose largest dimension is greater than 1 m (all other surfaces).

The impacts were applied with even distribution over the faces of the enclosure. The test was not applied to the enclosure components (e.g. locks, hinges, etc.).

Pictures of the test can be found in Appendix A.3.

After the test, the enclosure continued to provide the IP code. It is possible to remove and reinstall removable covers and to open and close doors.

Result: Pass

6.7 Degree of protection of assembly

The verification of the degree of protection is done in conformity with IEC 62208, clause 9.9.

The tests were made according to IEC 60529. The degree of protection is IP55.

Pictures of the test can be found in Appendix A.4.

6.7.1 Tests for the first numeral 5

Protection against access to hazardous parts.
This test was done with a straight rigid steel wire with a diameter of 1 mm and a length of 100 mm. The access probe was pushed against any openings of the enclosure with a test force of 1 N ± 10%.

The wire did not enter the enclosure and adequate clearance to hazardous parts was kept.

Result: Pass

Protection against solid foreign objects.
The test was made using a dust chamber incorporating the basic principles shown in figure 2 of 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 enclosure under test was supported in its normal operating position inside the test chamber and was not connected to a vacuum pump. Any drain-hole normally open was left open for the duration of the test. The duration of the test was 8 hours.

After the test there was no dust found inside the enclosure.

Result: Pass

6.7.2 Test for the second numeral 5

Protection against water jets
The test was made using a test nozzle according to fig. 6 of IEC 60529 with an internal diameter of 6,3 mm. The enclosure was sprayed from all practicable directions with a rate of water flow of 12,5 l/min ± 5%. The distance from nozzle to the enclosure surface was between 2,5 and 3 meters. The duration of the test was 7 minutes.

After the test there was no water found inside the enclosure.

Result: Pass

6.8 Continuity of the protective circuit

The verification of the continuity of the protective circuit is done in conformity with IEC 62208, clause 9.12.

The effectiveness of the protective circuit has been verified by measuring the voltage drop from the PE terminal to several points of the enclosure. This measurement is done by injecting a DC-current of 10 A at several points of the assembly. Subsequently the resistance is calculated.

Enclosure	Max. resistance [mΩ]
left side cover	8
right side cover	6
back side cover	4
roof	7
plinth	6
screws	5
door	5
lifting eyebolts	11

Table 2: Continuity of the protective circuit test

All of the resistances are below the maximum allowed 100 mΩ.

Result: Pass

6.9 Verification of resistance to corrosion

The verification of the resistance to corrosion is done in conformity with IEC 62208, clause 9.14.2.1, severity test A.

The test consists of:

- 6 cycles of 24 h each to damp heat cycling test according to IEC 60068-2-30 (Test Db) at (40 ± 3) °C and relative humidity of 95% and
- 2 cycles of 24 h each to salt mist test according to IEC 60068-2-11 (Test Ka: salt mist), at a temperature of (35 ± 2) °C

Pictures of the tested materials can be found in Appendix A.5.

All materials comply with the following requirements:

- there is no evidence of iron oxide, cracking or other deterioration more than that allowed by ISO 4628-3 for a degree of rusting Ri1
- the mechanical integrity is not impaired
- seals are not damaged
- doors, hinges, locks, and fastenings work without abnormal effort

Result: Pass

6.10 Thermal power dissipation capability

The verification of the thermal power dissipation capability is done in conformity with IEC 62208, clause 9.15.

The thermal power dissipation data is determined by a calculation method according to IEC/TR 60890.

The power dissipation capability was calculated for a permissible temperature increase in the top of the enclosure of 40 °C. Based on the free standing condition (Type #1 installation) the power loss can be maximum 815 W.

Result: Pass

Appendix A Type test pictures

A.1 Photos of static loads test

Photo 3: Static loads test (1)

Photo 4: Static loads test (2)

Photo 5: Static loads test (3)

Photo 6: Static loads test (4)

Photo 7: Static loads test (5)

A.2 Photos of lifting test

Photo 8: Lifting test (1)

Photo 9: Lifting test (2)

A.3 Photos of mechanical impact (IK) test

Photo 10: Mechanical impact (IK08) test (1)

Photo 11: Mechanical impact (IK08) test (2)

Photo 12: Mechanical impact (IK08) test (3)

Photo 13: Impact locations door

Photo 14: Impact locations left side cover

Photo 15: Impact locations back side cover

Photo 16: Impact locations right side cover

A.4 Photos of degree of protection (IP) test

Photo 17: Before IP5X test (1)

Photo 18: Before IP5X test (2)

Photo 19: After IP5X test (1)

Photo 20: After IP5X test (2)

Photo 21: After IP5X test (3)

Photo 22: IPX5 test (1)

Photo 23: IPX5 test (2)

Photo 24: IPX5 test (3)

Photo 25: IPX5 test (4)

Photo 26: After IP55 test (1)

Photo 27: After IP55 test (2)

Photo 28: After IP55 test (3)

Photo 29: After IP55 test (4)

Photo 30: After IP55 test (5)

Photo 31: After IP55 test (6)

A.5 Photos of resistance to corrosion test

Photo 32: Samples after corrosion test (1)

Photo 33: Samples after corrosion test (2)

Photo 34: Samples after corrosion test (3)

Photo 35: Samples after corrosion test (4)

Photo 36: Samples after corrosion test (5)

Photo 37: Samples after corrosion test (6)

Photo 38: Samples after corrosion test (7)

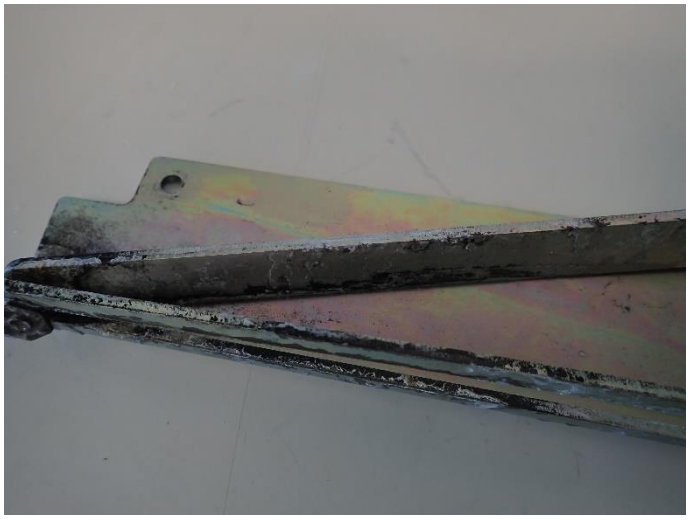

Photo 39: Samples after corrosion test (8)

Photo 40: Samples after corrosion test (9)

Photo 41: Samples after corrosion test (10)

Photo 42: Samples after corrosion test (11)

Photo 43: Samples after corrosion test (12)

Photo 44: Samples after corrosion test (13)

Photo 45: Samples after corrosion test (14)

Photo 46: Samples after corrosion test (15)

Photo 47: Samples after corrosion test (16)

Photo 48: Samples after corrosion test (17)

Photo 49: Samples after corrosion test (18)

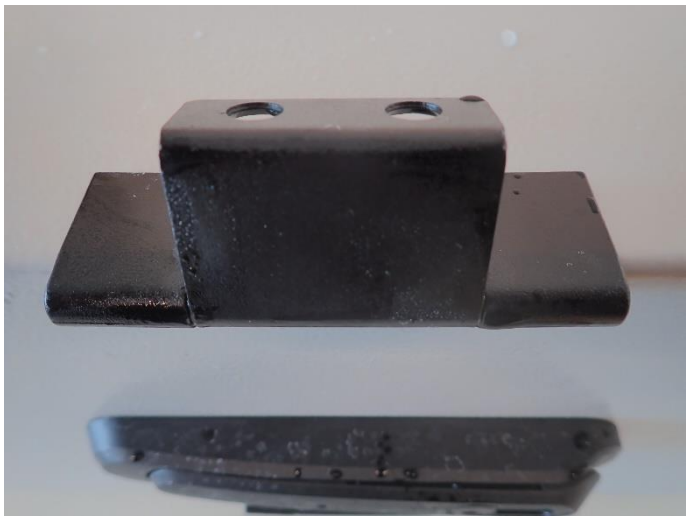

Photo 50: Samples after corrosion test (19)

Appendix B Product information