

2009-11-10

Test report	09/1055e
Test standard	DIN EN 60332-1-2:2005 Tests on electric and optical fibre cables under fire conditions – Part 1-2: Test for vertical flame propagation for a single insulated wire or cable – Procedure for 1 kW pre-mixed flame (IEC 60332-1-2:2004); German Version EN 60332-1-2:2004
Classification standard	DIN EN 60332-1-2:2005 Tests on electric and optical fibre cables under fire conditions – Part 1-2: Test for vertical flame propagation for a single insulated wire or cable – Procedure for 1 kW pre-mixed flame (IEC 60332-1-2:2004); German Version EN 60332-1-2:2004
Client	Huber + Suhner AG Mr. Hess Tumbelenstrasse 20 8330 Pfäffikon, Switzerland
Material	ENVIROFLEX 400, Art.-Nr. 22512280
Nominal thickness	5.0 mm

Test result

In the test on 2009-10-21 the sample fulfilled the requirements of DIN EN 60332-1-2.



Michael Halfmann
(Head of Fire Testing)



Günter Strompen
(Customer Support Fire Testing)



The Fire Technology laboratory of Currenta is accredited according to EN ISO/IEC 17025 generally for fire testing. The Fire Technology is notified by Federal Railway Authorities "Eisenbahnbundesamt (EBA)", "Eisenbahn-Cert (EBC) for European Railway Systems and for French Railway systems from L'agence de certification ferroviaire (CERTIFER).

The test results relate to the behaviour of the test specimens of a product under the particular conditions of the test; they are not intended to be the sole criterion for assessing the potential fire hazard of the product in use.



This test report may not be reproduced except in full, without our written approval.

Client's material description¹:

Trade name	ENVIROFLEX 400, Art.-Nr. 22512280
Product description	Cable
Manufacturer	Huber+Suhner AG
Data sheet no.	Remark 1
Safety data sheet no.	Remark 1
Thickness [mm]	Remark 1
Coarseness [kg/m]	Remark 1
Density [kg/m ³]	Remark 1
Composition [%]	Remark 1
Colour	black
Appearance	Remark 1
Flame-retardant treatment	Remark 1
Homogenous product	Remark 1
Field of application, maybe withdrawing	Remark 1
Standard handling	Remark 1
Standard backing	ensemble Cable
Surface to be tested?	Remark 1

Measurements:

File-No.	L91035H
Delivery date	2009-09-25
Date of test	2009-10-21
Conditioning	> 24 h / 23 °C / 50 % r. h.
Cable length [m]	0.6
Thickness [mm]	5.0
Coarseness [kg/m]	51.6
Appearance of surface	Cable
Colour	black
Operator	Erol Yaman
Test equipment no.	L-B411-P0018, L-B411-P0071, L-B411-P0072

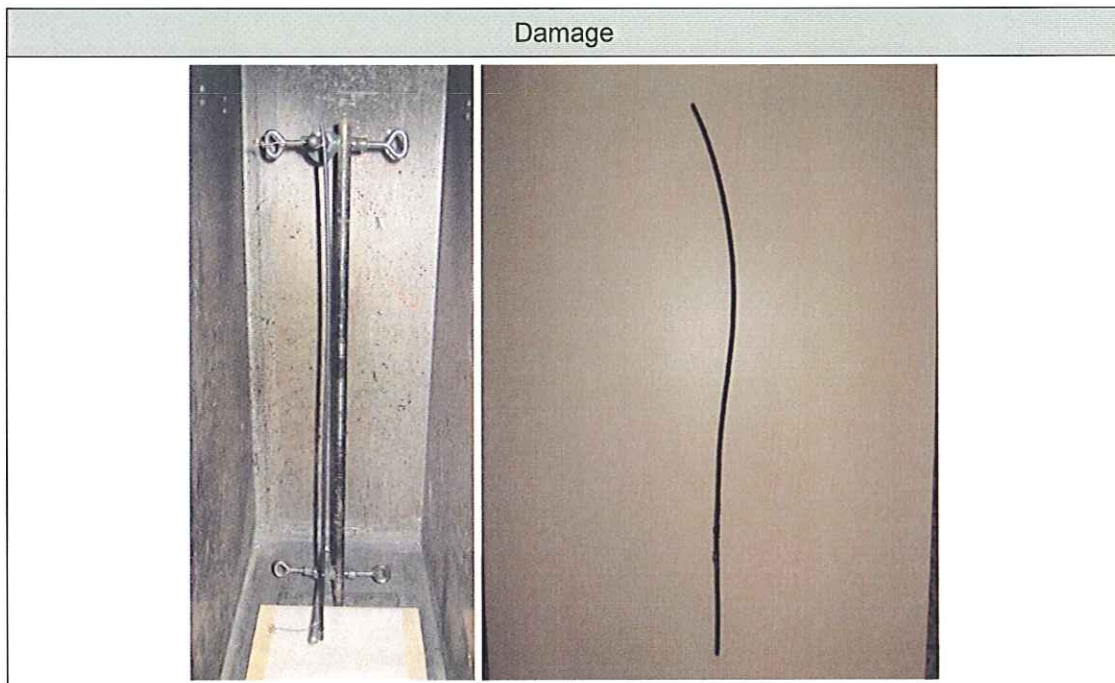
¹ Remark 1: The customer hasn't provide this information

Remark 2: The customer is unable to provide this information

Test results²:

Readings / Observation	Sample 1
Description	22512280
Flame application [s]	60
After flame time [s]	25
Not damaged area from lower edge of the top support [mm]	405
Damaged area from lower edge of the top support. Expansion downwards. [mm]	485
Requirements fulfilled [yes/no]	yes

Pictures of the test samples:



² The test specifications for special types or classes of conductors or cables or wires should be defined especially in the particular cable norms. If there are no specifications declared, following test specification at DIN EN 60332-1-2, Annex A, is recommended.

The wire or cable shall pass the test if the distance between the lower edge of the top support and the onset of charring is greater than 50 mm. In addition, a failure shall be recorded if burning extends downwards to a point greater than 540 mm from the lower edge of the top support. If a failure is recorded two more tests shall be carried out. If both tests result in passes, the wire or cable shall be deemed to have passed the test.

The minimal account criteria are identic with the specification of DIN EN 60332-1-2 and E DIN 5510-2, table 6.

By the ambit of E DIN 5510-2 the presented test reports are not allowed to be older than 3 years at delivery of proof binding vehicle parts.