CURRENTA GmbH & Co. OHG
SER ANT Brandtechnologie
CHEMPARK, Building B411
51368 Leverkusen, Germany

2010-09-24

Test report	10/1313e
Test standard	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
Classification standard	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
Client	Huber + Suhner AG Mr. Hess Tumbelenstrasse 20 CH-8330 Pfäffikon ZH, Switzerland
Material	Coaxial cable ENVIROFLEX_179, Item 23019104
Nominal thickness	2.6 mm
Date of test	2010-09-23

Test result

The tested sample fulfilled the requirements.

Frank Volkenborn
(Vice Head of Fire Testing)

CURRENTA Brandtechnologie

Günter Strompen
(Customer Support Fire Testing)

Deutscher Akkreditierungs Rat
DAR
DAC-PL-0001-94-20-02

ilac-MRA DACH
DAC-PL-0001-94-20-02

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.

Client's material description[1]:

Trade name		Coaxial cable
Product description		ENVIROFLEX_179, Item 23019104
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		blau
Appearance		Rund
Flame-retardant treatment		Remark 1
Homogenous product		Remark 1
Field of application, maybe withdrawing		Remark 1
Standard handling		Remark 1
Standard backing		Remark 1
Surface to be tested?		Entire cable

Measurements:

File-No.		L00945A
Delivery date		2010-09-02
Date of test		2010-09-23
Conditioning		> 24 h / 23 °C / 50 % r. h.
Cable length	[m]	0.6
Thickness	[mm]	2.6
Coarseness	[g/m]	11.5
Appearance of surface		Cable round
Colour		Black/blue
Operator		Erol Yaman
Test equipment no.		L-B411-P0018, L-B411-P0071, L-B411-P0072
All the test specimens were consumed		Yes

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

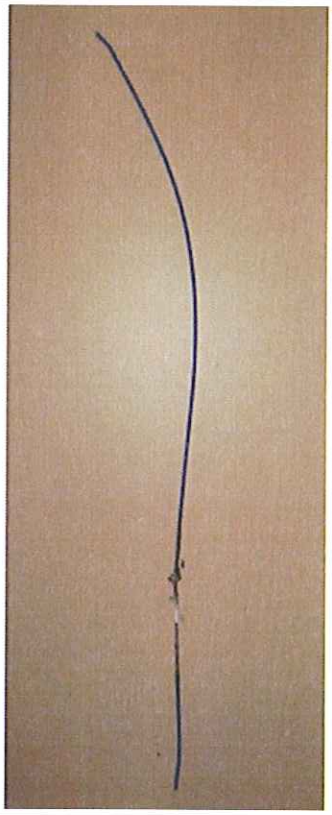
Remark 2: The customer is unable to provide this information

Test results[2]:

Readings / Observation		Sample 1
Description		Item 23019104
Flame application	[s]	60
After flame time	[s]	43
After glow time	[s]	--
Not damaged area from lower edge of the top support	[mm]	355
Damaged area from lower edge of the top support. Expansion downwards.	[mm]	490
Requirements fulfilled	[yes/no]	Yes

Pictures of the test samples:

Damage



[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.