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Elektrotechnický zkušební ústav, s. p.
Pod lisem 129/2, Troja, 182 00 Praha 8

TEST REPORT FOR REACTION TO FIRE

Test Report No.: 251737-01/01 Issued: 31. 7. 2025

Notified Body No. 1014

Name of product:	**Communication cable**
Type of product:	**CAT6**
Ratings:	**D_{ca}-s1,d2,a1**
Serial number:	-
Manufacturer:	**HANGZHOU RISINGSUN CABLE CO.,LTD.** 1ST FLOOR BUILDING 1,NO.258 XINGYU ROAD LINGLONG STREET LIN'AN, HANGZHOU ZHEJIANG PROVINCE, People republic of China
Production site:	-
Ordering firm:	**HANGZHOU RISINGSUN CABLE CO.,LTD.** 118 Datang Road, Linan, 311300 Hangzhou, People republic of China
Number of tested samples:	1
Samples submitted on:	21. 7. 2025
Location of testing:	Elektrotechnický zkušební ústav, s. p., Site 1 and 2
Tests performed	**from** 21. 7. 2025 **through** 31. 7. 2025
Other data:	-

Tested according to: ČSN EN 50399 ed.2:2023 (EN 50399:2022),
ČSN EN 60332-1-2:2005+A1:2016+A11:2017+A12:2021
(EN 60332-1-2:2004+A1:2016+A11:2017+A12:2020),
ČSN EN 60754-2:2015+A1:2020 (EN 60754-2:2014+A1:2020)

Compiled by: Jan Tůma

elektrotechnický zkušební ústav ezú -5- zkušební laboratoř

Approved by: Josef Šašek
Testing laboratory technical manager

No. of pages: 7 No. of attachments: 0 No. of attachments pages: 0

The test results stated in the test report apply only to the tested subject as received and unless specified otherwise in the test report, the tests were performed using the method and under the conditions determined in the test regulations, technical norm, instructions for use and information provided by the manufacturer on the tested subject and using accessories required by the manufacturer.
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Elektrotechnický zkušební ústav, s. p., Testing laboratory No. 1056 accredited by CAI according to ČSN EN ISO/IEC 17025:2018.

Test type: **Classificiation of electric cables according to reaction to fire**
Standart: EN 13501-6
EN 50399:2022
Measurement of the heat release and smoke production
EN 60332-1-2
Test of vertical flame spread on a single cable

Cable type: **Comunication cable CAT6**
Cable producer: CPR HANGZHOU RISINGSUN CABLE CO., LTD.
date of test: 23.7.2025

Number of pieces calculation:

Cable diametr: 6,0 mm

$$N = int\left[\frac{300+d_c}{2\times d_c}\right]$$

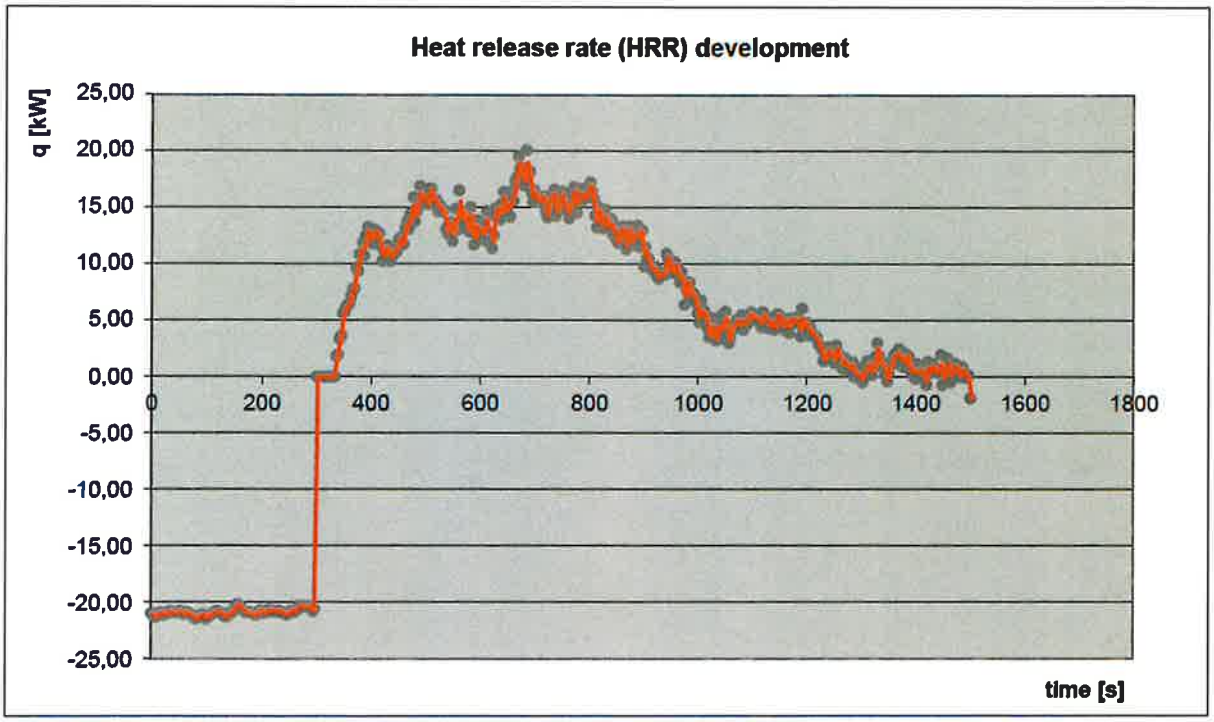
Test pieces: 25 ks
Mounting type: separately
Space: 6,0 mm

				required by: EN 13501-6 for class D_{ca}		
Test results:	**FS =**	>2	m	FS ≤	Not requirement	
	$HRR_{avg\ max}$ =	18,2	kW	Peak HRR ≤	400 kW	
	$SPR_{avg\ max}$ =	0,042	m^2/s	(s1) SPR ≤	0,25 m^2/s	(additional classific.)
	THR =	9,9	MJ	$THR_{1200\ s}$ ≤	70 MJ	
	TSP =	20,1	m^2	(s1) $TSP_{1200\ s}$ ≤	50 m^2	(additional classific.)
	FIGRA =	131,4	$W.s^{-1}$	FIGRA ≤	1300 $W.s^{-1}$	
	Burning particles :	Yes, it burns longer than 10 s		d2		(additional classific.)
	Flame spread H =	159 mm		H ≤	425 mm	

Classification according to ČSN EN 13501-6: **D_{ca}-s1,d2**

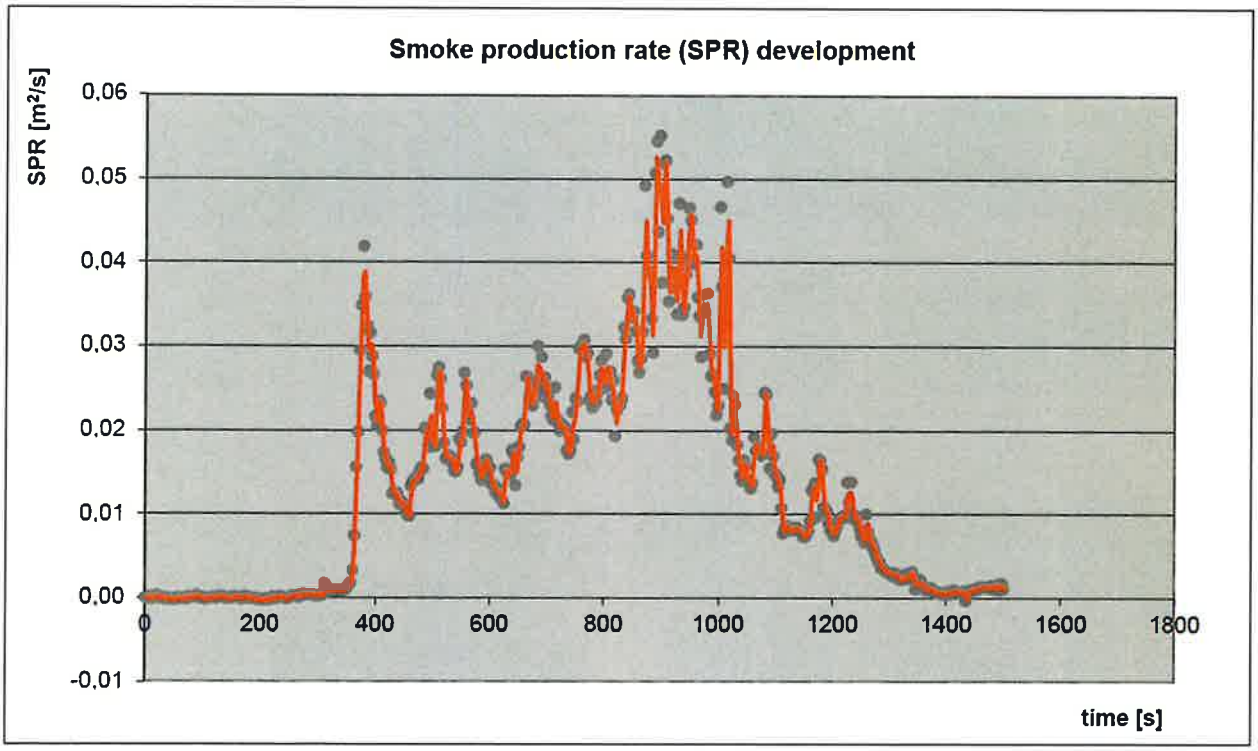
EN 50399:2011

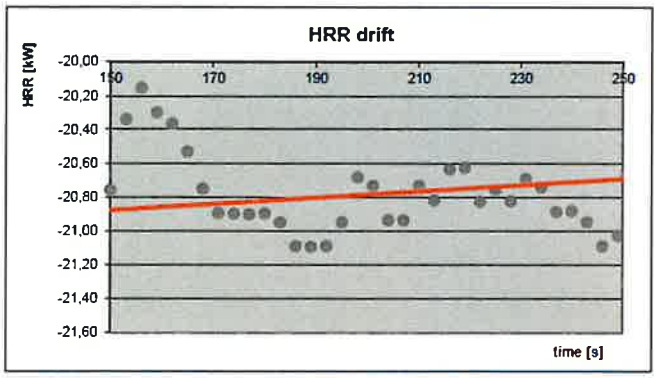
performance level: **20,5 kW**

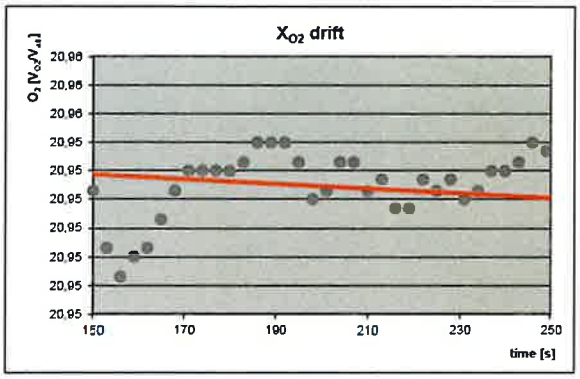


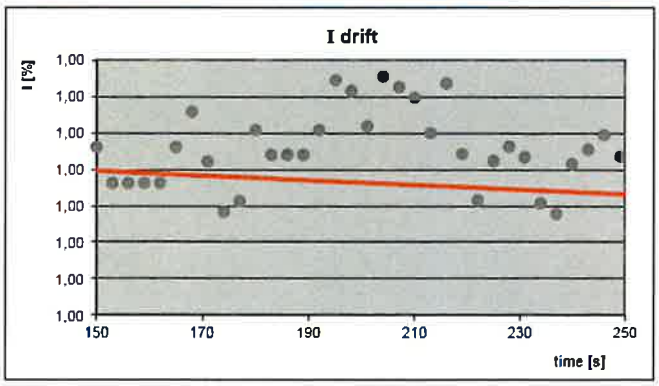
$HRR_{avg\ max}$ =	18,186	kW	RH =	46,6	%
THR_{1200} =	9,926	MJ	p^0_{atm} =	98630	Pa
$SPR_{avg\ max}$ =	0,042	m^2/s	ϑ_{atm} =	24,5	°C
TSP_{1200} =	20,071	m^2			
FIGRA =	131,36	$W.s^{-1}$			
$SPR^{(tb+1200)\,s}_{min}$ =	**0**	**m^2/s**	propane mass =	524,4	g
criteria max =	**-0,035**	**m^2/s**	ignition time =	300	s
$HRR^{(tb+1200)\,s}_{min}$ =	**0,000**		flameout time =	900	s
criteria max =	**-4,000**	**kW**			

HRR_{drift} =	**0,527**	**kW**
criteria max =	**2,000**	**kW**
$x_{O2\ drift}$ =	**0,001**	**V_{O2}/V_{air}**
criteria max =	**0,010**	**V_{O2}/V_{air}**
I_{drift} =	**0,010**	**%**
criteria max =	**1,000**	**%**

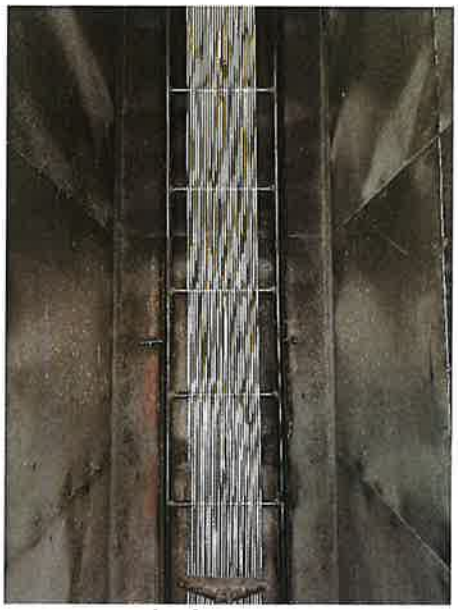

Smoke production rate (SPR) development
SPR [m²/s]
0,06
0,05
0,04
0,03
0,02
0,01
0,00
-0,01
0
200
400
600
800
1000
1200
1400
1600
1800
time [s]


HRR drift
HRR [kW]
-20,00
-20,20
-20,40
-20,60
-20,80
-21,00
-21,20
-21,40
-21,60
150
170
190
210
230
250
time [s]


X02 drift
20,96
20,96
20,96
20,95
20,95
20,95
20,95
20,95
20,95
150
170
190
210
230
250
time [s]


I drift
I [%]
1,00
1,00
1,00
1,00
1,00
1,00
1,00
1,00
150
170
190
210
230
250
time [s]

EN 50399



Before test



1. min.



5. min.



7. min.



10. min.



15. min.



After test

Test	Prescribed			Observed
Test on complete cable				
Test for vertical flame propagation EN 60332-1-2, article 5 EN 60332-1-2, article 6				
- outer diameter		[mm]		6,0
- flame application time		[s]	60 - 240	60
- not damage area from lower edge of the top support	min.	[mm]	50	319
- damage area from lower edge of the top support	max.	[mm]	540	478
- flame spread H	≤	[mm]	425	159
Tests on gases evolved during combustion EN 60754-2, article 8.3				additional classification: **a1**
- conductivity	max.	[µS/mm]	2,5	0,22
- pH	min.		4,3	6,78

EN 60332-1-2



Before test



Course of the tests



After test

Measuring and testing equipment

Used	Type	Key number	check	alarm occured
X	Metter 100 cm	N 400013		
X	Slide caliper	259		
X	Mixed burner 1 kW	552678		
X	Stainless steel screen	552963		
X	Burner stand	550821		
X	Digital inclinometer Clinotronic plus	551976		
X	Monitor Environment S3120E (207)	N 500014		
-	Smoke index measurement chamber	110359		
-	Luxmetter Mavolux 5032 B	551893		
-	Temperature meter OTH	19644		
-	Digital multimeter AX-105	701164		
X	Digital gravity BP 610	550156		
X	Combustion chamber	110239		
X	pH meter	551983		
X	Konduktometer	551983		
X	diferencial barometer Testo 521	SOD 024		
X	multimeter Fluke 189	EOD 015		
X	multimeter Fluke 189	EOD 016		
X	digital termometer Testo T645	TKD 012		
X	termometer Testo 177-T4	TKD 020		
X	gas analyzer SICK-MAIHAK S710	SOD 025		
X	digital anemometer T425	SOD 022		
X	Mass Flowmeter aer - Brooks	SOD 020		
X	Mass Flowmeter propan - Brooks	SOD 021		
-	Monitor Environment S3120E (M2)	N500046	☐	☐
X	Monitor Environment S3120E (16)	N500040	☒	☐
X	Monitor Environment S3120E (16)	N500005	☒	☐
X	Monitor Environment S3120E (15)	N500030	☒	☐
-	Monitor Environment S3120E (14)	N500016	☐	☐
-	Monitor Environment S3120E (17)	N500006	☐	☐
X	Monitor Environment S3120E (207)	N500014	☒	☐

If an uncertainty of measurement is given, the expanded a measurement uncertainty is the product of the standard measurement uncertainty and coverage factor k = 2, which corresponds to a coverage probability of approximately 95% in a normal distribution.

Laboratory conditions during the test were in accordance with specifications of the standards listed on the first page of this test report.

Compiled by: Jan Tůma

Measurement uncertainty is not applied when providing statements of conformity in accordance with IEC Guide 115:2023, cl. 4.3.3.

The end of the test report