

Technical Construction File**EN IEC 60282-4:2020****High-voltage fuses****Part 4: Additional testing requirements for high-voltage
expulsion fuses utilizing polymeric insulators**

Report reference No.....: TLZJ24082661459

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Date of issue.....: September 06,2024



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Applicant.....: Hangzhou Easy Electric Wire and Cable Co., LTD.

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Zhejiang, China

Manufacturer.....: Hangzhou Easy Electric Wire and Cable Co., LTD.

Address.....: Room 508, Building A5, No. 2-150, Yunlian Road, Hangzhou,
Zhejiang, China

Factory.....: The same as applicant

Address.....:

Standard.....: EN IEC 60282-4:2020

Review Report Form No.....: 60282-4

TRF originator.....: GTS

Master TRF.....: Reference No. EN IEC 60282-4:2020

Review procedure: GTS

Type of Review object.....: Fuse Cutout

Trademark.....: -

Model/type reference.....: 12-36KV Porcelain Fuse Cutout
12-38KV Polymer Insulated Fuse Cutout

Rating.....: See the annex

Possible review case verdicts:

- review case does not apply to the test object..... : N(.A.)
- review object does meet the requirement..... : P(ass)
- review object does not meet the requirement..... : F(ail)

General remarks:

"(see remark #)" refers to a remark appended to the report.

"(see appended table)" refers to a table appended to the report.

Throughout this report a comma is used as the decimal separator.

The review results presented in this report relate only to the object reviewed.

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Testing:

Date of receipt of review item:

August 26,2024

Date(s) of performance of review:

August 26,2024 to September 06,2024

General product information:

Fuse Cutout

Summary of reviewing:

This review report includes:

Annex I: 1 page(s) of photo documentation.

Copy of marking plate

Fuse Cutout ,

Model: 12-36KV Porcelain Fuse Cutout
12-38KV Polymer Insulated Fuse Cutout

Marking



Hangzhou Easy Electric Wire and Cable Co., LTD.

EN IEC 60282-4:2020			
Cl.	Requirement – Test	Result	Verdict
4	Type tests		--
4.1	General requirements		--
	Fuses according to this document shall comply with the requirements of IEC 60282-2, except for those that are specifically replaced with requirements specified in this document for the following type tests.		P
4.2	Mechanical tests		--
4.2.1	Mechanical stressing at temperature extremes		N/A
4.2.2	Long term deformation/creep testing		N/A
4.3	Environmental tests		--
4.3.1	General		--
	These tests are for fuses that incorporate composite and/or resin type polymeric insulators.		N/A
4.3.2	Accelerated weathering test		N/A
4.3.3	Tracking and erosion test		N/A
4.3.4	Flammability test		--
	No flammability tests are required for any type of polymeric insulator being part of cut out fuse bases. However, if required by the customer, further information on flammability testing associated with polymer insulators can be found in IEC 6221 7.		N/A
4.4	Tests on interfaces and connections of end fittings		--
4.4.1	General		--
4.4.2	Water immersion pre-stressing procedure		--
	<p>Pre-stressing only applies to fuses using composite polymeric insulators. Only the fuse-base is required to undergo the pre-stressing procedure.</p> <p>a) The hardness of the insulator housing shall be measured for each sample. Measurement shall be in accordance with ISO 868 using a Shore A Durometer.</p> <p>b) Each sample shall be boiled for 1 00 h in water having 0,1 % by weight of NaCl.</p> <p>c) After boiling, each insulator sample shall be allowed to cool and rinsed with deionized water.</p> <p>d) The hardness shall be re-measured. The hardness shall not have changed by more than 20 %.</p> <p>e) The verification tests (4.4.3) shall be completed within 48 h of the samples being removed</p>		N/A

EN IEC 60282-4:2020			
Cl.	Requirement – Test	Result	Verdict
	from the boiling water.		
4.4.3	Verification tests		--
4.5	Breaking tests with dye penetration		--
4.5.1	General		--
	This test applies to fuses that use composite and/or resin type polymeric insulators. The purpose of the test is to assess the interrupting performance of fuse-bases incorporating polymeric insulators.		--
4.5.2	Description of tests to be made		--
	The breaking tests shall be made with single-phase alternating current. Tests shall be made in accordance with IEC 60282-2:2008, 8.6, Test Duty 1 : Verification of operation with the rated maximum breaking current I ₁ . It is not necessary to perform additional Test Duty 1 tests to those specified in IEC 60282-2:2008. Fuse-supports from tests performed in accordance with Test Duty 1 of IEC 60282-2:2008, 8.6 may be used to evaluate the requirements of 4.5.		N/A
4.6	Acceptance criteria		--
	a) There shall be no visible damage to the polymeric insulator(s) and test samples shall meet the requirements of IEC 60282-2:2008, 7.2. b) For fuses that use composite polymeric insulators, samples cut from each tested insulator shall be subjected to a dye penetration test in accordance to the requirements of 4.2.1 .4 in order to verify that no damage to the core material has occurred. The fuses are considered to have passed the tests if all samples meet the requirements in 4.2.1 .5.		P

ANNEX:

12-36KV

Porcelain Fuse Cutout

	12kV-15kV		15kV-27kV		24kV-27kV		27kV-33kV		33kV-36kV	
Type	CA1		CA7		CA13		CA21		CA22	
Rated voltage(kV)	15	15	15	15	24	24	30	30	33	33
Rated current(A)	100	200	100	200	100	200	100	200	100	200
Breaking current(A)	10000	12000	10000	12000	8000	10000	6000	8000	10000	12000
Impulse voltage(BIL)	110	110	125	125	150	150	170	170	170	170
Power frequency withstand voltage	40	40	45	45	65	65	70	70	70	70
Leakage distance(mm)	250	250	350	350	540	540	700	700	720	720
Weight(kG)	7.3	7.3	8.5	8.5	12	12	15	15	15.5	15.5
Dimensions(cm)	38.5x34.5x10.5		48x34.5x10.5		49x35x14		56x38x14.5		57x38x14.5	

12-38KV

Polymer Insulated Fuse Cutout

	12kV-15kV		24kV-27kV		27kV-33kV		30kV-33kV		36kV-38kV	
Type	CA26		CA29		CA32		CA33		CA34	
Rated voltage(kV)	12-15	12-15	24-27	24-27	27-33	27-33	30-33	30-33	36-38	36-38
Rated current(A)	100	200	100	200	100	200	100	200	100	200
Breaking current(A)	10000	12000	6000	8000	6000	8000	6000	8000	6000	8000
Impulse voltage(BIL)	110	110	150	150	170	170	170	170	180	180
Power frequency withstand voltage	40	40	65	65	70	70	70	70	75	75
Leakage distance(mm)	380	380	650	650	620	620	680	680	820	820

PHOTO DOCUMENTATION:

Type of equipment:	Fuse Cutout
Model:	12-36KV Porcelain Fuse Cutout 12-38KV Polymer Insulated Fuse Cutout

Details of:	
View:	
<input checked="" type="checkbox"/> general	
<input type="checkbox"/> front	
<input type="checkbox"/> rear	
<input type="checkbox"/> right	
<input type="checkbox"/> left	
<input type="checkbox"/> top	
<input type="checkbox"/> bottom	

Details of:	
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