

Type Approval Certificate

This is to certify that the undernoted product(s) have been tested with satisfactory results in accordance with the relevant requirements of the Lloyd's Register Type Approval System.

This certificate is issued to:

PRODUCER	3M Nederland B.V.		
PLACE OF PRODUCTION	Amsterdamseweg 61 3812 RR Amersfoort The Netherlands		
PRODUCT DESCRIPTION	Flame retardant and Halogen free heat shrink closures for electric cable joints on smooth surface armoured/unarmoured plastic and rubber insulated cables up to 1 kV		
PRODUCT TYPE	HDT-A MDT-A F471		
APPLICATION	Marine and Offshore use for the joining of electric cables		
RATINGS		HDT-A	MDT-A F471
	Bore supplied, mm	12-135	12-120
	Bore recovered, mm	3-37	3-36
	Volume Resistivity Ωm	$>10^{12}$	$>10^{12}$
	Dielectric test	$>6\text{kV/mm}$	$>6\text{kV/mm}$
	Operating temperature	-40° to 110° C	
STANDARDS	Manufacturer's specification IEC 60684-2 2012		

Certificate No.	19/30007
Issue Date	30 April 2019
Expiry Date	29 April 2024
Sheet	1 of 2



H.L. Reekers

Rotterdam Technical Support Office

Lloyd's Register EMEA
K.P. Van der Mandelelaan 41a, 3062MB Rotterdam

Lloyd's Register EMEA is a subsidiary of Lloyd's Register Group

Lloyd's Register Group Limited, its affiliates and subsidiaries and their respective officers, employees or agents are, individually and collectively, referred to in this clause as the 'Lloyd's Register'. Lloyd's Register assumes no responsibility and shall not be liable to any person for any loss, damage or expense caused by reliance on the information or advice in this document or howsoever provided, unless that person has signed a contract with the relevant Lloyd's Register entity for the provision of this information or advice and in that case any responsibility or liability is exclusively on the terms and conditions set out in that contract.

“This Certificate is not valid for equipment, the design, ratings or operating parameters of which have been varied from the specimen tested. The manufacturer should notify LR of any modification or changes to the equipment in order to obtain a valid certificate.”

The attached Design Appraisal Document No. GRO.TA/190721 and its supplementary Type Approval Terms and Conditions form part of this Certificate.

This certificate is no longer valid when Standards or Rules are amended.

Type Approval does not eliminate the need for normal inspection and survey procedures required by the Rules and Regulations

Certificate No.	19/30007
Issue Date	30 April 2019
Expiry Date	29 April 2024
Sheet	2 of 2



H.L. Reekers

Rotterdam Technical Support Office

Lloyd's Register EMEA
K.P. Van der Mandelelaan 41a, 3062MB Rotterdam

Lloyd's Register EMEA is a subsidiary of Lloyd's Register Group

Lloyd's Register Group Limited, its affiliates and subsidiaries and their respective officers, employees or agents are, individually and collectively, referred to in this clause as the 'Lloyd's Register'. Lloyd's Register assumes no responsibility and shall not be liable to any person for any loss, damage or expense caused by reliance on the information or advice in this document or howsoever provided, unless that person has signed a contract with the relevant Lloyd's Register entity for the provision of this information or advice and in that case any responsibility or liability is exclusively on the terms and conditions set out in that contract.