

CERTIFICATE OF COMPLIANCE

Certificate Number 20131119-E361301
Report Reference E361301-20130315
Issue Date 2013-NOVEMBER-19

Issued to: HOGANAS AB
BRUKSGATAN 35
S-263 83 HOGANAS SWEDEN


**This is to certify that
representative samples of**

COMPONENT - SYSTEMS, ELECTRICAL INSULATION
Class 155 (F) insulation system designated HOGANAS
155-F or F.

Have been investigated by UL in accordance with the
Standard(s) indicated on this Certificate.

Standard(s) for Safety: Standard for systems of insulating materials, UL 1446
Additional Information: See the UL Online Certifications Directory at
www.ul.com/database for additional information

Only those products bearing the UL Recognized Component Mark should be considered as being covered by UL's Recognition and Follow-Up Service.

The UL Recognized Component Mark generally consists of the manufacturer's identification and catalog number, model number or other product designation as specified under "Marking" for the particular Recognition as published in the appropriate UL Directory. As a supplementary means of identifying products that have been produced under UL's Component Recognition Program, UL's Recognized Component Mark: , may be used in conjunction with the required Recognized Marks. The Recognized Component Mark is required when specified in the UL Directory preceding the recognitions or under "Markings" for the individual recognitions.

Recognized components are incomplete in certain constructional features or restricted in performance capabilities and are intended for use as components of complete equipment submitted for investigation rather than for direct separate installation in the field. The final acceptance of the component is dependent upon its installation and use in complete equipment submitted to UL LLC.

Look for the UL Recognized Component Mark on the product.



William R. Carney, Director, North American Certification Programs
UL LLC

Any information and documentation involving UL Mark services are provided on behalf of UL LLC (UL) or any authorized licensee of UL. For questions, please contact a local UL Customer Service Representative at www.ul.com/contactus



DESCRIPTION

PRODUCT COVERED:

Component - Systems, Electrical Insulation.

USR - Class 155 (F) insulation system designated HOGANAS 155-F **or F**.

USR indicates investigation to UL Standard UL1446.

Electrical Insulation System designated F is identical to system designated HOGANAS 155-F, except for designation.

GENERAL CHARACTER:

The insulation system covered by this Report is for use in transformer motor or coil constructions.

RATINGS:

System Designation	Insulation Class	Maximum Hot Spot Temperature	Indoor	Outdoor (Enclosed)
Hoganas 155-F or F	(F)	155	Yes	Yes

The insulation system has been evaluated for connection to the low voltage side of the distribution network where the voltage is limited to 1000 V or less and where transient overvoltages and partial discharge are not likely to contribute to the degradation of the insulation system.

This use is consistent with systems extending from the service point or source of power operating at not more than 600 V nominal according to the National Electrical Code, NFPA 70. This application is also consistent with systems extending from the consumer's service in Low-Voltage or Extra-low voltage applications at not more than 750 V according to the Canadian Electrical Code, C22.1 and low-voltage mains of 1000 V ac or less in overvoltage category IV installations according to Electrical Installations of Buildings, IEC 60364.

TABLE I
CLASS 155 (H) INSULATION SYSTEM
DESIGNATED HOGANAS 155-F

CONSTRUCTION DETAILS:

With the exception of any deviations indicated below the Construction Details of the OBJY2 insulation system covered by this Report are identical to that of an OBJS2 insulation system cross referenced in the table below.

OBJY2 Insulation System covered by this Report	OBJS2 Insulation System Found on the Internet			
	Recognized Company	File Number	OBJS2 System Designation	Table
Hoganas 155-F or F	Isovolta AG	E208136	Isovolta 155-2	ALL

The manufacturer is to use the Internet on behalf of UL's Field Representative to obtain the current Construction Details for this OBJS2 system. This information is stored in the UL iQ for Insulation Systems database, which can be accessed by logging into either MyHome or UL iQ via UL.com.

Except for technical problems beyond the Manufacturer's control (site/phone problems, network problems, power outages, etc.) if the Internet cannot be accessed for this inspection, a Variation Notice is to be written.

CONSTRUCTION DETAILS:

TABLE II
CLASS 155 (H) INSULATION SYSTEM
DESIGNATED HOGANAS 155-F **or F**

Insulation thicknesses indicated below are minimums.

The use of this insulation system is limited to the combination of materials specified below. Where more than one item is designated under Insulation Function, they may be used together, unless otherwise indicated, or they may be used as alternates to one another. Functions designated "optional" are not necessarily required for every design. If more than one material is specified for a non-optional function, at least one of the materials must be used. If thickness is specified for these non-optional materials, the material chosen must be used in at least the minimum thickness specified.

Insulation Function	Insulating Material
1. Magnet Wire	Aluminum or copper, round or rectangular.
2. Magnet Wire Insulation	Recognized Component - Magnet Wire (OBMW2), single build or greater.
	Magnet wire types listed below may not be used in combination within a single product.
	A. Magnet wire designated DAMID PE, manufactured by Dahrendrad AB, file E101843.
	B. Polyester basecoat with a polyamide-imide topcoat, rated 220°C, ANSI MW 37 type, various manufacturers.
3. Ground and Interwinding Insulation	A. Nomex 410, 0.20 mm (0.008 in.) minimum thickness, E I Dupont De Nemours & Co Inc.
4. Tape (Optional)	A. Tape No. PS 25, H-Old SpA
5. Tubing and Sleeving (Optional)	A. Cat. No. Siligaine 15C4, mfg. by Omerin S A S.
6. Potting Compound (Optional)	The following potting compounds may not be used in place of Varnish unless they are one and the same or the varnish is marked "optional"
	A. EP 8260FL w/Hardner 1018, mfg. by Wevo-Chemie GmbH.
7. Potting Shell (Optional)	Any moldable material in this table
	A. Somaloy® potting shell, mfg. by Höganäs.

TEST RECORD NO. 3

GENERAL:

Test results relate only to the items tested.

No tests were considered necessary to add an additional designation of F to the Class 155(F) insulation system designated Hogan as 155-F since this insulation system was previously evaluated in this report under Test Record 1 and 2.

Electrical Insulation System designated F is identical to system designated HOGANAS 155-F, except for designation.

The above insulation system has previously been tested and found to comply with the requirements of the Standard for Systems of Insulating Materials - General, UL1446, in effect as of the date of this Test Record.

Test Record Summary:

The results of this investigation, including construction review and testing, indicate that the products evaluated comply with the applicable requirements in the standard for systems of insulating materials, UL 1446, 6th Edition, Revision Date 2011-12-06, therefore, such products are judged eligible to bear UL's Mark as described on the Conclusion Page of this Report.

Any information and documentation involving UL Mark services are provided on behalf of UL LLC or any authorized licensee of UL.

REPORT BY:

Brad Huchel
Project Engineer