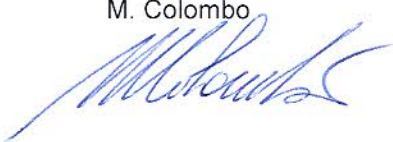
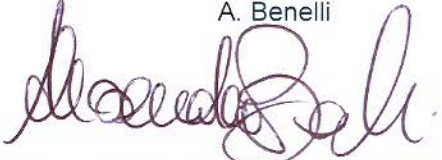


Product	BUSBAR
Model type	BXE-F 150S
Description	Busbar BXE 1600 A Al

Applicant	POGLIANO BUSBAR S.r.l. corso Allamano, 43 - 10095 Grugliasco (To) - Italy
Manufacturer	POGLIANO BUSBAR S.r.l. corso Allamano, 43 - 10095 Grugliasco (To) - Italy

Test carried out by	CABLES AND ADHESIVE TAPES LABORATORY - IMQ S.p.A. Via Quintiliano, 43 - 20138 Milano
Scope of the test	➤ Compliance with standard IEC 60331-1

Date of samples receiving (The sample was sampled from the applicant)	2013/03/07		
Date of tests start	2013/03/19	Date of tests end	2013/03/19
This test report is composed by	8 pages, divided as follows : 8 report pages 0 annexes pages		

Cable Testing Lab Technician	Cable Testing Lab Head
M. Colombo 	A. Benelli 

The results referred in this report are only relevant to the samples tested and described in this report.
Only complete reproduction of this test report is permitted without written authorization of IMQ.

SUMMARY**FIRE RESISTING TEST****3**

Reference Document	Title of Document
IEC 60331-1 : 2009-05 Edition 1.0 as applicable ⁽¹⁾	Tests for electric cables under fire conditions - Circuitry integrity Part 1 : Test method for fire with shock at a temperature of at least 830°C for cables of rated voltage up to and including 0,6/1,0 kV and with an overall diameter exceeding 20 mm.

⁽¹⁾ The standard has been prepared for the test on electric cables.

Test N.1	FIRE RESISTING TEST			
Test according to standard	IEC 60331-1			
Test equipment	<ul style="list-style-type: none"> ➤ A test ladder, it consists of a steel framework. Total mass of the test ladder 18 ± 1 Kg. ➤ A continuity checking arrangement is made as follow: A current of 0,25 A at the test voltage, pass through each conductor and it is provided by a three phase star transformer; at the other end of the sample, a suitable load and indicating device lamps is placed. ➤ Source of heat : ribbon type propane gas burner face length of 500 mm with Venturi mixer having an accurate means of controlling the fuel and air input flow rates. ➤ Shock producing device : a mild steel round bar $25 \pm 0,1$ mm in diameter and 600 ± 5 mm long. ➤ Thermocouples type K : Rif. IMQ n. S-03211 e S-03212 ➤ Propane mass flowmeter : Rif. IMQ n. S-04340 ➤ Air mass flowmeter : Rif. IMQ n. S-04341 			
Identification of samples	Sample "A"			
	Piece of completed busbar			
Sampling	Length of the sample : 80 cm			
Verification procedure for source of heat	<ul style="list-style-type: none"> ➤ Flame temperature measuring: two 1,5 mm mineral insulated thermocouples Type K ➤ Positioning of the burner : 110 ± 10 mm horizontally from the wall 50 ± 10 mm vertically below the centre line of thermocouple ➤ Temperature : $830^{+40, -0}$ °C 			
Test conditions	<ul style="list-style-type: none"> ➤ Flow rates (at reference conditions of 1 bar and 20 °C) <ul style="list-style-type: none"> - Propane : $10 \pm 0,4$ litres/minute - Air : 160 ± 8 litres/minute ➤ Voltage applied between conductors : 1000 V ➤ Test temperature : $830^{+40, -0}$ °C ➤ Test duration : 180 minutes 			

Test procedure	<ul style="list-style-type: none">➤ Verification procedure for source of heat and removed of the thermocouples from the wall.➤ The busbar is mounted on the wall with metallic parts earthed.➤ At the transformer output with a 2A fuse, each conductor has been connected to a separate phases.➤ The burner has been positioned.➤ Ignited the burner and adjusted the propane and air flow rates to those obtained during verification procedure.➤ After ignited the burner, switched on the electricity supply.➤ The shock producing device impact the wall after 5 min. \pm 10 s from activation and subsequently at 5 min. \pm 10 s intervals.
Test valuation	<ul style="list-style-type: none">➤ Duration of survival : the duration of survival, measured in minutes, to the point of failure shall be recorded up to a maximum survival time of 180 min.➤ The criteria for determining the point of failure shall be as follows :<ul style="list-style-type: none">- the voltage is not maintained during the test duration, as indicated by fuse failure;- a conductor rupture during the test duration, as indicated by the lamp extinguishing.
Test results sample "A"	<ul style="list-style-type: none">➤ During the test, no failure of any the 2A fuses, insert on each phases occurs➤ During the test, no extinguishing of lamps.➤ Time of duration survival : 180 minutes. <p style="text-align: center;">POSITIVE</p>

The uncertainties for the tests and measurements are those listed in IMQ Operational Instruction IO-LAB-001 and IO-01-G02.

Identification test sample**Sample before the test**