

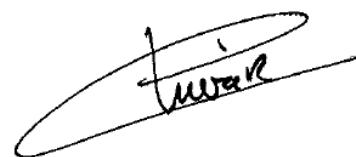
FIRE TEST OF BUILDING ELEMENTS

According to the European standard NF EN 12101-3 : 2002-09

CERTIFICATE OF APPROVAL

- Subject** : Fire tests of a range of electrical motors Ref. M3BPW
- Tests n°** : 04 - H - 081
04 - H - 086
04 - G - 082
09 - H - 156
10 - H - 143
- Carried out on** : March 1st , 2004
March 2nd , 2004
March 3rd , 2004
March 26th , 2009
April 8th , 2010
- Reports n°** : 04 - G - 082
10 - H - 143
- Sponsor** : ABB OY MOTORS
Strömbergin Puistotie 5A
FIN - 65101 VAASA
- Scope** : A range of electrical motors of low-voltage, three-phase, asynchronous, closed cage electric motors with the following features:
- manufacturer : ABB OY MOTORS
 - reference : M3BPW
 - construction : TEFC
 - frame size : from 160 up to 400
 - electrical ratings up to 560 kW
 - nominal rated voltages supply up to 690 V
 - rotational speeds : from 4 up to 12 poles and multi speeds motors
 - insulation class/temperature rise class/specifications : H/F-B/EN 60034-1
 - frame and end covers material : cast iron
 - cooling fan material : aluminium (plastic fan allowed)
 - fan cover : steel
 - applications : DOL and VSD (maximal rotational speed 1800 rpm/min)
 - Maximal frequency equal to 60 Hz for both application
 - NDE free ball-bearing, class of fit C4, greased by UNIREX N2 (ESSO)
- For motors mounted in vertical position V1:**
- DE locked angular contact ball bearing greased by UNIREX N2 (ESSO)
- THE DIRECTION OF THE DE-BEARING SHALL SUIT WITH THE DIRECTION OF AXIAL LOAD**
- For motors mounted in horizontal position B3 or B5:**
- DE locked ball-bearing, class of fit C4, greased by UNIREX N2 (ESSO)
- Test procedure** : These motors were tested according to the Annexe D, with a dynamic load calculated according to ISO 281 and defined in the technical file of manufacturer. The tests were performed with a corresponding axial load in vertical position and a corresponding radial load for horizontal position.
- Conclusions** :
- | | |
|------------------------|--|
| OPERATING TEMPERATURE | : FOUR HUNDRED DEGREES CELSIUS (400° C) |
| OPERATING TIME | : ONE HUNDRED TWENTY MINUTES (120 min) |
| TEMPERATURE CLASS/TIME | : F400-120 |
| APPLICATION CLASS | : DUAL PURPOSE |

Maizières-lès-Metz, France, July 9th, 2010



Roman CHIVA
Head of department "Tests 1"