

## FIRE TEST OF BUILDING ELEMENTS

According to the French Decree dated of August 3<sup>rd</sup> 1999

### CERTIFICATE OF APPROVAL

- Subject** : Fire tests of a range of electrical motors Ref. M3BPW
- Tests n°** : 04 - G - 076  
04 - H - 073  
04 - H - 077  
04 - H - 087  
**Carried out on** : February 25<sup>th</sup>, 2004  
February 24<sup>th</sup>, 2004  
February 25<sup>th</sup>, 2004  
March 3<sup>rd</sup>, 2004
- Report n°** : 04 - H - 087
- Sponsor** : ABB OY, ELECTRICAL MACHINES LV 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, ELECTRICAL MACHINES LV MOTORS
  - reference : M3BPW
  - construction : TEFC
  - frame sizes : from 160 up to 400
  - electrical ratings : 400 V - 50 Hz - from 11 up to 560 kW
  - nominal rated voltages supply between 190 V and 690 V
  - rotational speeds : from 4 poles up to 12 and double speed motors
  - insulation class/temperature rise class/specifications : H/F-B/EN 60034-1
  - frame and end covers material : cast iron
  - cooling fan material : aluminum (plastic fan allowed)
  - fan cover : steel
  - Maximal frequency equal to 60 Hz for both applications
- airings features for motors from 160 frame up to 400 frame :
- Bearing type /arrangement /class of fit /lubricant DE :  
ball bearing regreasable /locked bearing /C4 /UNIREX N2 (ESSO)
  - Bearing type /arrangement /class of fit /lubricant NDE :  
ball bearing regreasable /free bearing /C4 / UNIREX N2 (ESSO)
- The insulation system depends on the application DOL or VSD. The manufacturer has to respect the description of the insulation system given in the technical files.
- Test procedure** : These motors were tested according to the Annexe D, in association with generator, with a dynamic load calculated according to ISO 281 and defined in the technical file of manufacturer. The dimensioning of the motors took into consideration axial and radial loads, the tests had been performed with a radial load corresponding.
- Conclusions** : OPERATING TEMPERATURE : **TWO HUNDRED AND FIFTY DEGREES CELSIUS (250°C)**  
OPERATING TIME : **ONE HUNDRED AND TWENTY MINUTES (120 min)**

Maizières-lès-Metz, France, September 29<sup>th</sup>, 2006

  
Kristelle BISCH  
Engineer In Charge of tests

This certificate of test is for information only. Only a full copy of the test report, if any, will allow the conformity checking necessary for the validity of the object.