

Schedule – 6

Energy Efficient Induction Motors-Three Phase Squirrel Cage

The test procedure, schedule of tests, rating plan and other parameters in respect of General Purpose Motors is as follows:

1. Scope

1.1. This standard specifies the requirements for participating in the energy labeling scheme for 3 phase squirrel cage induction motor in 2 Pole and 4 Pole for continuous duty (S1) operation at suitable for voltage and frequency variation as per IS 12615:2004 with the following output rating 0.75 kW, 1.1 kW, 1.5 kW, 2.2 kW, 3.7 kW, 5.5 kW, 7.5 kW, 9.3 kW, 11 kW and 15 kW.

1.2 The referred Indian Standard are IS 12615: 2004, IS: 4029 – 1967, IS 325: 1996 including all the amendments.

In particular, this scheme specifies the following:

1. Rated output (rating)
2. Efficiency Class as per IS 12615:2004 (eff1, eff2)
3. Some of the requirements for energy label validity.
4. The performance criteria for energy labeling validity.
5. Test report format.
6. Name plate details for general purpose squirrel cage induction motors with energy labels.

2. Schedule of Tests:

2.1 Method of Tests:

The testing code and procedure would be as per IS: 4029 – 1967, reaffirmed 2002, with all amendments.

2.2 Parameters to be tested:

Parameters for qualification of initial, verification and challenge testing are the mandatory type test parameters listed under clause 22.3.1 of IS 325: 1996 and including all amendments as of date relevant to the efficiency determination.

For the case of initial verification & challenge testing, following tests for efficiency determination would be conducted -

- Measurement of winding resistance(b)
- No load test at rated voltage(c) & at different voltages to compute friction & windage losses.
- Full Load test (g)

2.3 Test Report:

The test report format will be as per the form given in Annexure C of IS 325:1996. For the purpose of this standard, tables for name plate data & Load test will be sufficient. However, the sample should comply with other tests.

Conditions of compliance:

For compliance with the requirements of this standard, the values of efficiency is subject to IS 325 tolerance, listed under appropriate efficiency class (either improved efficiency – eff2 or high efficiency – eff1) in Tables 1 and 2 of IS 12615: 2004. Operating at rated voltage and rated frequency, the performance of the motor at rated conditions shall be as specified in Tables 1 and 2 of IS 12615: 2004.

3. Tolerance limits:

All the performance values are subject to tolerance as specified in IS 325: 1996. Clause Numbers 17.1.2 regarding ambient temperatures and 17.1.3 regarding altitude above 1000 m shall not be considered for this standard.

4. Labeling Plan

Eff2 (as per IS 12615:2004) with the specified tolerance limits would be the minimum entry level for labeling as per this schedule. eff1 (as per IS 12615:2004) would endorsed by BEE as high efficiency label as per this schedule.

5. Sampling

The samples will be picked up by BEE or its designated agency for testing at the NABL accredited laboratory as per the following plan-

2 samples each for 2 all polarities and ratings.

6. Qualifications:

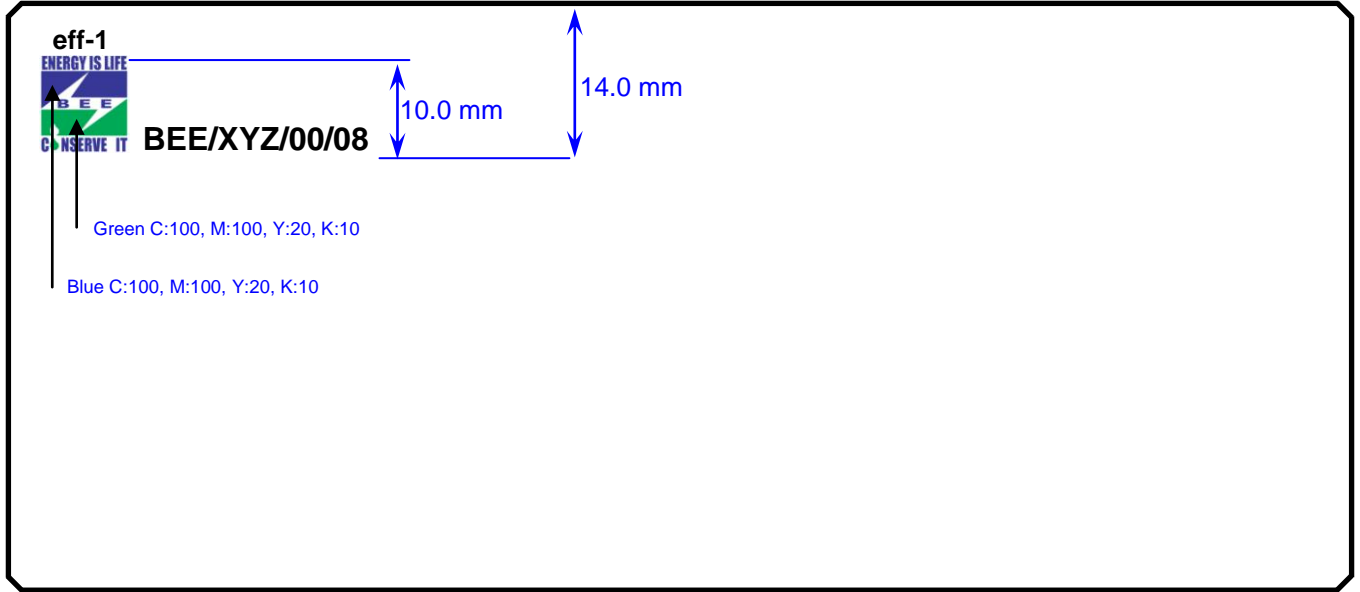
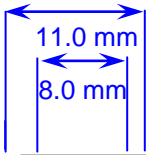
- a) The products should conform to minimum requirements of IS 12615: 2004 to participate in BEE S&L Programme.
- b) BIS mark licensing or Quality Certification such as ISO – 9000 and above should be required to participate in BEE S&L Programme.

7. Label content, manner of display:

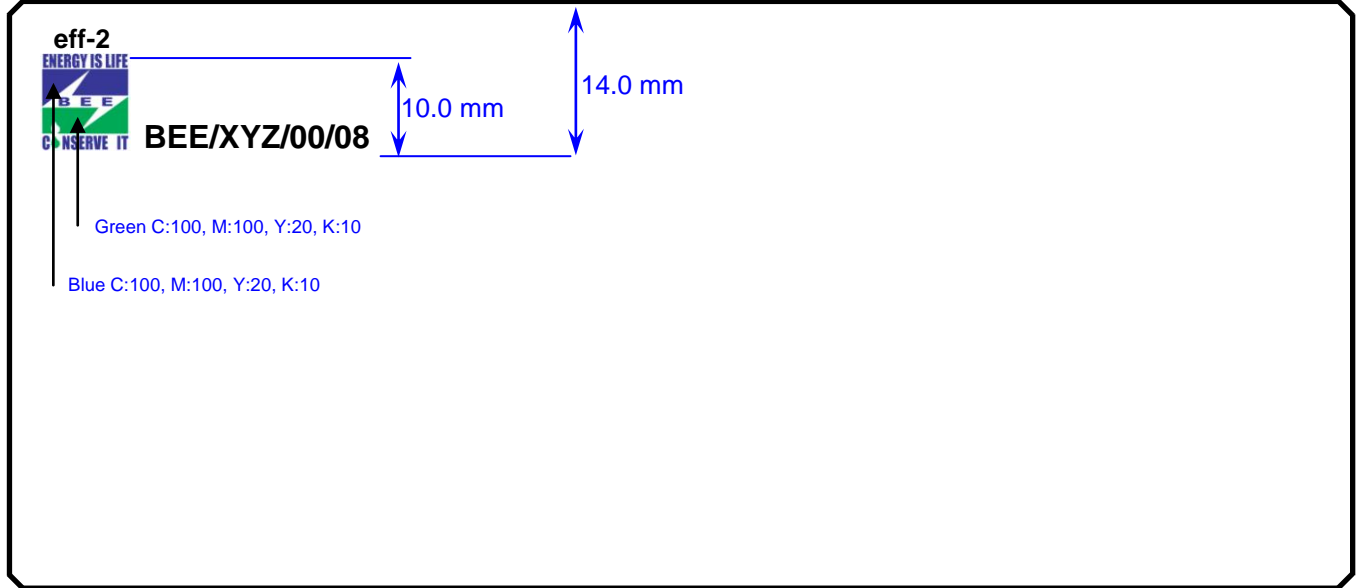
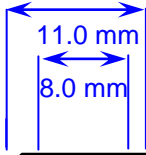
- The size of the name plate & position of display shall be as per the choice of motor manufacturers; however the BEE logo including contents (High Efficiency declaration + BEE registration number + eff class) shall be punched on top left hand side of the name plate.
- The size of the BEE logo along with the spaces intended for High Efficiency declaration, BEE registration number and eff class shall remain constant for all motor rating due to certification trademarks constraint. The dimensions of the logo are as per attached
- The BEE logo shall be 8x10 mm in size
- All other contents of the name plate shall confirm to BIS specification as per clause 20 of IS 325. Any other additional information may be furnished if required by the manufacturers.

8. Labeling Fees

- (i) Registration fee is payable on application for authority to affix labels is Rs. 1000/- (Rupees one thousand only)
- (ii) Registration fee is payable on application for renewal of authority to affix labels is Rs. 500/- (Rupees five hundred only)
- (iii) Labeling fee for affixation of label on each General purpose motor is Rs. 5 (five rupee only).



Induction Motor Label Details – eff1



Induction Motor Label Details – eff2