

Schedule-30Date: 14th December 2021**Tyres****1. SCOPE**

- 1.1. This schedule species requirements for participating in energy labelling programme for C1, C2 & C3 tyres covered under scope of AIS:142, meant for manufactured, imported and sold in India.
- 1.2. This schedule covers the terminology, general guidelines and method of tests to be conducted on tyres as per AIS: 142 particularly the methodology for testing of rolling resistance coefficient & wet grip index.
- 1.3. This schedule specifies the tyres star rating band which is based on Rolling Resistance Coefficients This schedule is applicable for base model, its batch and their variant model tyres.

2. NORMATIVE REFERENCES:

This schedule shall be read in conjunction with the following Indian Standards with all revision and all amendments for the purpose of star labelling.

| Sr. No. | Parameter | Reference |
|---------|--------------------------------------|--|
| i | Class C1 tyres | Tyres conforming to Standard IS 15633 |
| ii | Class C2 tyres | Tyres conforming to Standard IS 15636 and identified by a load capacity index in single formation lower or equal to 121 and a speed category symbol higher or equal to "N" and/or tyres marked with LT/C |
| iii | Class C3 tyres | Tyres conforming to Standard IS 15636 and identified by: (a) A load capacity index in single formation higher or equal to 122 and /or tyres not marked with LT/C; or (b) A load capacity index in single formation lower or equal to 121 and a speed category symbol lower or equal to "M" and/or tyres not marked with LT/C |
| iv | Rolling Resistance Coefficient (RRC) | As per Annex-D of AIS 142 |
| v | Wet Grip index (G) | As per Annex-C of AIS 142 |

3. TERMINOLOGY

3.1 Tyre: An annular toroidal shaped inflatable envelope made of elastic -materials, natural and/or synthetic rubber or a blend thereof, reinforced with a textile/steel cord fabric casing enclosing multi-coil wire headings. The tyre is so made that it can be used by mounting and inflating on the appropriate rim.

3.1.1 Family of Tyres: Tyres, which do not differ in the aspects listed below, but having different brand names/trade name/trade descriptions or trade-marks:

- (a) The manufacturer's name;
- (b) The tyre class;
- (c) The tyre structure;
- (d) The category of use: normal tyre, snow tyre and special use tyre;
- (e) For Class C1, tyres submitted for approval of performance adhesion on wet surfaces, whether normal tyres or snow tyres with a speed category of Q or below excluding H (≤ 160 km/h) or speed category R and above including H (> 160 km/h);
- (g) The tread patterns.

3.2 Rolling Resistance (F_r): Loss of energy (or energy consumed) per unit of distance travelled.

3.3 Rolling Resistance Coefficient (RRC): Ratio of the rolling resistance to the load on the tyre.

3.4 Wet Grip Index (G): The ratio between the performance of the candidate tyre and the performance of the standard reference test tyre.

3.5 Label: Means any written, printed, marked, stamped or graphic matter affixed to, or appearing on the tyre.

3.6 Validity of Label: Means the validity period of energy labelling plan specified in this schedule.

4. TESTING GUIDELINES:

4.1 Methods of Tests: All the tests specified in this schedule shall be carried out as per AIS: 142 with all its revision.

4.2 Worst Case Criteria: If the application is for a range of tyres from a family, worst case criteria shall be considered as defined under clause 8.3 & 8.4 of AIS:142.

5. TEST REPORT:

The results of test shall be reported in the prescribed format as given in **Annexure-II** of this schedule.

6. TOLERANCE LIMIT

There shall be no tolerances for upper limits of RRC values for Star Rating band; the products tested must be at par or better than the Star label threshold.

7. MINIMUM QUALIFYING REQUIREMENTS

7.1 The products should conform to all the requirements of CMVR rule, 1989 and AIS: 142 with all its amendments and revisions to participate in Bureau of Energy Efficiency (BEE) labelling programme.

7.2 BIS certification mark or Quality System Certification as per ISO:9000 should be required to firm / manufacturer of tyres to participate in the BEE labelling programme.

7.3 The tyres shall meet all the minimum performance requirements given in AIS: 142 with all its amendments and revisions. Test reports will only be accepted from laboratories accredited by accrediting agencies such as NABL in India or any other accreditation

bodies who are signatory to MRA with APAC and/or ILAC in India as well as overseas/other countries.

8. RATING PLAN

Table-1 (Limits for RRC values)

| C-1 tyres (Rim Dia < 14") | | | C-1 tyres (Rim Dia ≥ 14") | | |
|---------------------------|-------------|-------------|---------------------------|-------------|-------------|
| Star | Lower Limit | Upper Limit | Star | Lower Limit | Upper Limit |
| No-Star | 13.6 | Above 13.6 | No-Star | 12.1 | Above 12.1 |
| * | 12.6 | 13.5 | * | 11.1 | 12 |
| ** | 11.6 | 12.5 | ** | 10.1 | 11 |
| *** | 10.6 | 11.5 | *** | 9.1 | 10 |
| **** | 9.6 | 10.5 | **** | 8.1 | 9 |
| ***** | 0 | 9.5 | ***** | 0 | 8 |

| C-2 tyres (Rim Dia ≤ 14") | | | C-2 tyres (Rim Dia > 14") | | |
|---------------------------|-------------|-------------|---------------------------|-------------|-------------|
| Star | Lower Limit | Upper Limit | Star | Lower Limit | Upper Limit |
| No-Star | 13.6 | Above 13.6 | No-Star | 13.1 | Above 13.1 |
| * | 11.1 | 13.5 | * | 10.6 | 13.0 |
| ** | 10.1 | 11 | ** | 9.6 | 10.5 |
| *** | 9.1 | 10 | *** | 8.6 | 9.5 |
| **** | 8.1 | 9 | **** | 7.6 | 8.5 |
| ***** | 0 | 8 | ***** | 0 | 7.5 |

| C-3 Tyres | | |
|-----------|-------------|-------------|
| Star | Lower Limit | Upper Limit |
| No-Star | 10.1 | Above 10.1 |
| * | 7.6 | 10 |
| ** | 6.6 | 7.5 |
| *** | 5.6 | 6.5 |
| **** | 4.6 | 5.5 |
| ***** | 0 | 4.5 |

All values of RRC are in N/kN which is equivalent to value in kg/tonne. For "snow tyres for use in severe snow conditions", the limits shall be increased by 1N/kN.

Table-2 (Wet Grip Limits)

- For Class C1 tyres:**

| Category of use | Wet grip index (G) |
|---|--------------------|
| Normal tyre | ≥ 1.1 |
| Snow tyre | ≥ 1.1 |
| "Snow tyre for use in severe snow conditions" and with a speed symbol ("R" and above, including "H") indicating a maximum permissible speed greater than 160 km/h | ≥ 1.0 |
| "Snow tyre for use in severe snow conditions" and with a speed symbol ("Q" or below excluding "H") indicating a maximum permissible speed not greater than 160 km/h | ≥ 0.9 |
| Special use tyre | Exempted |

- **For Class C2 and C3 tyres:**

| Category of use | For C2 tyres | | For C3 tyres | |
|---|--------------|----------------|--------------|----------------|
| | Others | Traction Tyres | Others | Traction Tyres |
| Normal tyre | ≥ 0.95 | ≥ 0.85 | ≥ 0.80 | ≥ 0.65 |
| Snow tyre | ≥ 0.95 | ≥ 0.85 | ≥ 0.65 | ≥ 0.65 |
| Snow tyre for use in severe snow conditions | ≥ 0.85 | ≥ 0.85 | ≥ 0.65 | ≥ 0.65 |
| Special use tyre | ≥ 0.85 | ≥ 0.85 | ≥ 0.65 | ≥ 0.65 |

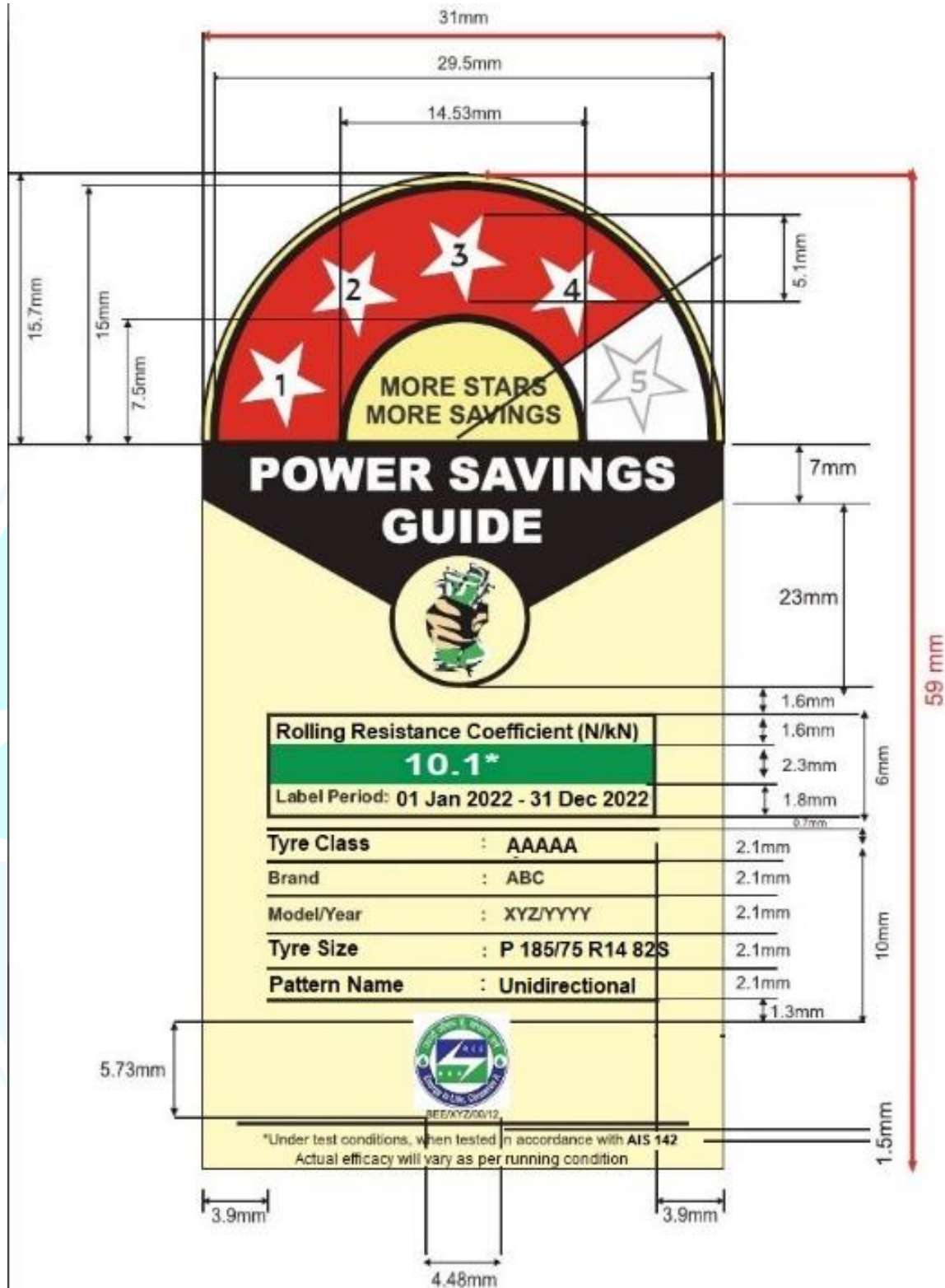
There is no tolerance for the upper limit for RRC value of the corresponding Star Rating Band. All tested products must meet the minimum threshold for each Star Rating Band. The scope of manufacturing tolerance and other variations shall be accounted by the manufacturer or permittee, while determining the Star Rating of a particular tyre model.

FEES

- 8.1 Application fee payable by applicant for assignment of the authority to affix / rivet label on tyres is **₹2000/- (Two Thousand INR only)**.
- 8.2 Application fee payable by applicant for renewal of the authority to affix / rivet label on tyres is **₹1000/- (One Thousand INR only)**.
- 8.3 Labelling fee for affixation of label on each unit / Number on tyres is **₹1/- (One INR only)**, waived off for voluntary phase (up to one year).

9. LABEL DESIGN AND MANNER OF DISPLAY

- 9.1 **Location of Star Rating label:** All tyres must display the label at the point of sale. The label shall be affixed on the side walls or tread of the tyre.
- 9.2 **Material, Dimension and Shape:** The star rating label shall be pasted on the wall/tread of the tyres as per outlines shown in figure 1.
- 9.3 **Sample Label:** An example of printed star rating label to be affixed on the model is shown at **Annexure-I**.



Sample Label

Test Report**1. General Information:**

| | | |
|--------------------------------|-------------------------|------------------|
| Name of testing laboratory | | |
| Address | | |
| Date of Receipt of application | | |
| Test method | AIS:142 (RR / Wet Grip) | |
| Test report No. | | Month & Year: |
| Certificate No. | | Date: DD/MM/YYYY |
| Authorized signatory | Name | Signature |

2. Details of Sample tested

| | | |
|------------|---------------------------------------|--|
| 2.1 | Manufacturer Address | |
| 2.2 | Tyre: | |
| | Make | |
| | Model | |
| | Pattern | |
| | Brand Name | |
| | Type of tyre (C1/C2/C3) | |
| | Tyre Size | |
| | Year of Manufacturer & Month | |
| 2.2 | Fuel Economy calculation data: | |
| | Wet Grip Value: | |
| | RRC Value: | |
| | Star Rating: | |

Remark: The Star rating certificate shall be issued based on test report of tyres.