RA 3272 – Continuous Friction Measuring Equipment (CFME)

Rationale

In order to ensure safe operation of Air Systems, the condition of landing surfaces needs to be evaluated.

Contents

3272(1): Continuous Friction Measuring Equipment

Regulation

3272(1) Continuous Friction Measuring Equipment

3272(1) CFME shall be used in specific circumstances.

Acceptable Means of Compliance

3272(1)

Continuous Friction Measuring Equipment

1. CFME, such as Gripster and Mu-meter, are considered unreliable on contaminated Runways and may indicate a higher than actual friction measurement. Therefore, CFME should not be used on Runways contaminated with wet snow, slush or water.

2. Friction tests should be completed utilising CFME:
   a. If doubt exists as to the braking conditions of the Runway.
   b. Whenever there is an Air System incident/accident on the Runway, where a possibility exists that the surface conditions may have been a contributing factor, a full evaluation of those sections of the Runway considered to be associated with the incident/accident should be carried out in accordance with the Post Crash Management procedures contained in the Manual of Post Crash Management, and records of readings and traces retained in accordance with RA3204, Air Traffic Management (ATM) Records.

3. A friction test should consist of:
   a. One run over the usable length of the Runway on a line between 2 m and 10 m each side of the centreline.
   b. Additional runs at varying distances from the centreline should be conducted where poor areas are known to exist, or to cover Air System formation operations.

4. Mean values should be recorded for each third of the Runway length available.

5. The braking condition for the total Runway length should be passed to the pilot unless the Braking Code has changed between runway thirds.

6. A plan of the Runway(s) should be maintained by Air Traffic Control (ATC) showing where pooling occurs and where areas of low friction caused by rubber deposits, Runway markings, etc. exist, especially if a recurring equivalent coefficient reading of 0.35 or below is recorded. If this is the case Defence Infrastructure Organisation (DIO) should be advised.

7. Contaminated Runway. Where Runways are contaminated with wet snow, slush or water, (greater than 3 mm depth) Runway conditions should be reported detailing the contamination for each third of the Runway as detailed in Manual of Aerodrome Design and Safeguarding.

8. A record should be kept by ATC of all evaluation monitoring runs. A copy of the
Rainfall trace for the day **should** be attached to the record. If the rainfall trace is not available a full rain report for the day **should** be requested and attached to the record.

**Continuous Friction Measuring Equipment**

9. **Equivalent Braking Action.** The table below describing friction values is only valid for compacted snow and/or ice covered Runways. The description ‘Good’ is used in the comparative sense, e.g. good for an icy surface, as clearly a surface affected by ice or snow is not as good as a dry or wet Runway.

<table>
<thead>
<tr>
<th>Measured or Calculated Coefficient</th>
<th>ICAO Estimated Surface Friction</th>
<th>Weather Teletype Code</th>
<th>RCR/CFRI/JBI Factor</th>
<th>Equivalent Braking Action</th>
<th>Percentage Increase in Landing Roll</th>
</tr>
</thead>
<tbody>
<tr>
<td>A 0.40 and above 0.36 to 0.39</td>
<td>Good</td>
<td>5</td>
<td>25/1.00</td>
<td>Good</td>
<td>0.15%</td>
</tr>
<tr>
<td></td>
<td>Medium/Good</td>
<td>4</td>
<td>23/0.88</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>19/0.70</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B 18/0.65</td>
<td></td>
<td></td>
<td>13/0.50</td>
<td>Fair (Medium)</td>
<td>16-45%</td>
</tr>
<tr>
<td>C 0.30 to 0.35 0.26 to 0.29</td>
<td>Medium</td>
<td>3</td>
<td>12/0.48</td>
<td>Poor</td>
<td>46-99%</td>
</tr>
<tr>
<td>D Medium/Poor</td>
<td></td>
<td>2</td>
<td>9/0.37</td>
<td></td>
<td></td>
</tr>
<tr>
<td>E 0.26 to 0.29</td>
<td></td>
<td></td>
<td>6/0.25</td>
<td></td>
<td></td>
</tr>
<tr>
<td>F 0.25 and below</td>
<td>Poor</td>
<td>1</td>
<td>5/0.23</td>
<td>Nil</td>
<td>100% or more</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>2/0.10</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Conversion of Mu Reading to Runway Condition Report (RCR) Readings**

10. To convert Mu readings to RCR readings, units will multiply the Mu figure by 32.1522 and then round down to the nearest whole number, for example:

11. Mu Reading = 0.77  RCR = 0.77 x 32.1522 = 24.757 = 24

12. Deployment of CFME on contaminated Runways for the purpose of obtaining friction value readings is not permitted because contaminant drag on the equipment's measuring wheel, amongst other factors, will cause readings obtained in these conditions to be unreliable. A Runway is termed contaminated when water deeper than 3 mm, or wet snow or slush is present over 25% or more of the assessed area.