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|  | FDOT Traffic Engineering Research Laboratory (TERL)  ASTM D4280 9.2.2 & 9.5 Checklist | By signing this form, the applicant declares that he/she has read and understands the provisions of the *ASTM D4280 Standard*. The requirements listed on this checklist are derived from Sections 9.2.2 & 9.5 and are the basis for determining a product’s compliance to these sections of the standard. |

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| Date: | Click here to enter a date. | Applicant’s  Name (print): |  |
| Manufacturer: |  |  |  |
| Item, Model No.: |  | Signature: |  |

|  |  | **\*\* Greyed out rows in table below are for TERL use only \*\*** |  |  |  |
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| **ID No** | **Section** | **Requirement** | **Item Comply? (Yes/No/NA)** | **Comments (Applicant must provide information as indicated)** | **TERL Evaluation Method** |
| The following criteria are for Compressive Strength. | | | | | |
| 1 | 9.2.2.1 | Marker is conditioned for four hours prior to testing at 73.4 ± 3.6 °F (23.0 ± 2.0 °C). |  |  | Document Review |
|  |  |  |  |  | Init.: |
| 2 | 9.2.2.2 | Marker is positioned base down at the center of a 0.5 in (13 mm) thick flat steel plate, the plate is larger than the marker. |  |  | Document Review |
|  |  |  |  |  | Init.: |
| 3 | 9.2.2.3 | Marker is covered by a 0.37 in (9.5 mm) thick elastomeric pad with a Shore A durometer of 60, the pad is larger than the marker. |  |  | Document Review |
|  |  |  |  |  | Init.: |
| 4 | 9.2.2.4 | Elastomeric pad is covered by a 0.5 in (13 mm) thick flat steel plate, the plate is larger than the marker. |  |  | Document Review |
|  |  |  |  |  | Init.: |
| 5 | 9.2.2.5 | Top steel plate has a load applied at a rate of 0.1 in (2.5 mm)/min. |  |  | Document Review |
|  |  |  |  |  | Init.: |
| The following criteria are for Abrasion Resistance. | | | | | |
| 6 | 9.5.2 | Sand falls uniformly onto the front of the marker from a height of 9.8 ± 0.1 ft (3.00 ± 0.03 m). |  |  | Document Review |
|  |  |  |  |  | Init.: |
| 7 | 9.5.5 | Sand falls at least 9.4 ft (2.85 m) before reaching a calibration aperture with a horizontal rectangular opening 1.57 ± 0.04 in (4.0 ± 0.1 cm) by 4.72 ± 0.04 in (12.0 ± 0.1 cm), where the marker is centered beneath the opening. |  |  | Document Review |
|  |  |  |  |  | Init.: |
| 8 | 9.5.6 | Calibration aperture has a total of 5.5 ± 0.1 lb. (2.5 ± 0.05 kg) of sand fall through its opening at a rate maintained in the 0.9 lb./min to 2.2 lb./min (0.4 kg/min to 1.0 kg/min) range. |  |  | Document Review |
|  |  |  |  |  | Init.: |
| 9 | 9.5.7 | Marker is pre-conditioned to have the abrasion test be completed at 77 ± 9 °F (25 ± 5 °C) and 50 ± 25 % RH. |  |  | Document Review |
|  |  |  |  |  | Init.: |
| 10 | 9.5.8.1 | Abrasion apparatus consists of a vertical pipe with a sieve at the top, the calibration aperture with deflectors at the bottom, a marker support and something to collect the falling sand that passes through the aperture. |  |  | Document Review |
|  |  |  |  |  | Init.: |
| 11 | 9.5.8.2 | Sand falls within the full unobstructed pipe from the sieve to the calibration aperture. |  |  | Document Review |
|  |  |  |  |  | Init.: |
| 12 | 9.5.8.3 | Pipe has an inner diameter of at least 5.9 in (15 cm) and is 0.2° of vertical. |  |  | Document Review |
|  |  |  |  |  | Init.: |
| 13 | 9.5.8.4 | Sieve establishes the beginning point for the sand drop with sand falling no more than 1.2 in (3 cm) onto the sieve. |  |  | Document Review |
|  |  |  |  |  | Init.: |
| 14 | 9.5.8.5 | Calibration aperture is formed from four sharp horizontal edges, which are the upper edges of angled deflectors. |  |  | Document Review |
|  |  |  |  |  | Init.: |
| 15 |  | Sand is not deflected when it falls within the calibration aperture and is deflected when it falls outside the aperture so it can’t strike the marker. |  |  | Document Review |
|  |  |  |  |  | Init.: |
| 16 | 9.5.8.6 | Marker is mounted with its leading-edge no farther than 5.9 in (15 cm) from the plane of the calibration aperture. |  |  | Document Review |
|  |  |  |  |  | Init.: |
| 17 |  | Marker is mounted with no fixturing within 1 cm of its front face. |  |  | Document Review |
|  |  |  |  |  | Init.: |
| 18 |  | Fixturing allows sand to freely flow around the marker. |  |  | Document Review |
|  |  |  |  |  | Init.: |
| 19 |  | Marker base plane is within 1° of vertical and marker leading edge is with 2° of horizontal. |  |  | Document Review |
|  |  |  |  |  | Init.: |
| 20 | 9.5.8.7 | Sand that passes through the calibration aperture is collected and weighed. |  |  | Document Review |
|  |  |  |  |  | Init.: |
| 21 | 9.5.8.8 | Sand flows equally through all parts of the calibration aperture and is verified through the process described in Section 9.5.8.8. |  |  | Document Review |
|  |  |  |  |  | Init.: |

**Document History for:**

**ASTM D4280 9.2.2 & 9.5 Checklist**

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| Rev | Description | Authored and Checked | Reviewed | Approved | Approval Date | Rev More Stringent? |
| 1.0 | New checklist | A. Cramer | W. Geitz  D. Bremer | D. Vollmer | 06/09/2025 | N/A |
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