

APPARATUS

1. Micro-Deval Abrasion Machine, Jar rolling mill running at  $100 \pm 5$  rpm?..... \_\_\_\_\_
2. Containers, stainless steel micro-Deval abrasion jars:  
 (a) Jars with rubber ring in rotary locking cover, 5 L capacity?..... \_\_\_\_\_  
 (b) External diameter is **194 - 202mm**? ..... \_\_\_\_\_  
 (c) Internal height is **170 - 177mm**?..... \_\_\_\_\_  
 (d) Outside surface smooth (no observable ridges or indentations)?..... \_\_\_\_\_  
 (e) Inside surface smooth (no observable ridges or indentations)? ..... \_\_\_\_\_  
**(f) Containers and Control Aggregate monitored to assess need for conditioning with silica sand**..... \_\_\_\_\_
3. Abrasion charge, stainless steel balls:  
 (a) diameter is  $9.5 \pm 0.5$  mm? ..... \_\_\_\_\_  
 (b) charge is  $1250 \pm 5$  g of balls? ..... \_\_\_\_\_
4. Sieves of the following sizes:  
 LS-619:  
     2.36 mm? \_\_\_\_\_,      0.600 mm? \_\_\_\_\_,      0.150 mm? \_\_\_\_\_  
     1.18 mm? \_\_\_\_\_,      0.300 mm? \_\_\_\_\_,      0.075 mm? \_\_\_\_\_  
 In addition, a 6.7 mm sieve to separate the steel balls from the aggregate when washing? \_\_\_\_\_
- or A23.2-23A:  
     2.5 mm? \_\_\_\_\_,      0.630 mm? \_\_\_\_\_,      0.160 mm? \_\_\_\_\_  
     1.25 mm? \_\_\_\_\_,      0.315 mm? \_\_\_\_\_,      0.080 mm? \_\_\_\_\_  
 In addition, a 5 mm sieve to separate the steel balls from the aggregate when washing?... \_\_\_\_\_
5. Oven, capable of maintaining  $110 \pm 5^\circ\text{C}$ ? ..... \_\_\_\_\_
6. Balance, accurate to 0.1 g? ..... \_\_\_\_\_
7. Control Aggregate, a supply of standard James Dick screenings aggregate?..... \_\_\_\_\_

COMMENTS:

PROCEDURE

1. Sample obtained by LS-600 or A23.2-???..... \_\_\_\_\_
2. Sample prepared from material passing 4.75 mm (5 mm)?..... \_\_\_\_\_
3. Sample reduced by splitting to  $725 \pm 25$  g?..... \_\_\_\_\_
4. Sample washed on 75  $\mu$ m (80  $\mu$ m) sieve by LS-601 (A23.2-5A)?..... \_\_\_\_\_
5. Sample dried to a constant mass at  $110 \pm 5^\circ\text{C}$ ?..... \_\_\_\_\_
6. Test sample prepared to 2.8 FM using grading: \_\_\_\_\_

LS-619:

- |                                    |                                    |
|------------------------------------|------------------------------------|
| 4.75 to 2.36 mm: 50 g?..... _____  | 0.600 to 0.300 mm: 100 g? .. _____ |
| 2.36 to 1.18 mm: 125 g?..... _____ | 0.300 to 0.150 mm: 75 g?.... _____ |
| 1.18 to 0.600 mm: 125 g?.... _____ | 0.150 to 0.075 mm: 25 g?.... _____ |

**Note:** where testing has shown the loss on a material to be less than 17%, test sample may be reduced by splitting to  $500 \pm 5$  g. .... \_\_\_\_\_

or A23.2-23A:

- |                                    |                                    |
|------------------------------------|------------------------------------|
| ?? to 2.5 mm: 50 g?..... _____     | 0.630 to 0.315 mm: 100 g? .. _____ |
| 2.5 to 1.25 mm: 125 g?..... _____  | 0.315 to 0.160 mm: 75 g?.... _____ |
| 1.25 to 0.630 mm: 125 g?.... _____ | 0.160 to 0.080 mm: 25 g?.... _____ |

7. Test sample saturated in tap water for  $24 \pm 4$  hours ..... \_\_\_\_\_
8. Pour off excess water and place in micro-Deval container with  $750 \pm 25$  mL tap water?..... \_\_\_\_\_
9.  $1250 \pm 5$  g steel balls added? ..... \_\_\_\_\_
10. Machine run at  $100 \pm 5$  rpm for 15 minutes  $\pm 10$  seconds? ..... \_\_\_\_\_
11. Balls removed from sample by passing through a 6.7 mm sieve?..... \_\_\_\_\_
12. Sample washed on a 75  $\mu$ m in accordance with LS-601? ..... \_\_\_\_\_
13. Retained 75  $\mu$ m oven dried to a constant mass at  $110 \pm 5^\circ\text{C}$ ?..... \_\_\_\_\_
14. Sample weighed to nearest 0.1 g? ..... \_\_\_\_\_
15. Per cent loss calculated to nearest 0.1%? ..... \_\_\_\_\_

Use of Laboratory Control Aggregate

1. Laboratory has a supply of control aggregate? Source: James Dick..... \_\_\_\_\_
2. Control sample tested every 10 samples or at least every week when samples tested?..... \_\_\_\_\_
3. Control sample mean loss is 18.9%, range is 16.8 to 21.0%?..... \_\_\_\_\_
4. Control chart showing data for last 20 samples of reference material?..... \_\_\_\_\_
  - Mean for last 20 samples..... \_\_\_\_\_
  - Low for last 20 samples ..... \_\_\_\_\_
  - High for last 20 samples ..... \_\_\_\_\_

Comments: