Kentucky Method 64-409-~~02~~06
Dated ~~12/13/01~~03/07/06
Supersedes KM 64-409-~~99~~02
Dated ~~1/13/00~~12/13/01

COMPRESSION - DEFLECTION TEST FOR PREFORMED COMPRESSION JOINT SEALS

1. SCOPE: This test procedure is for the determination of the compression-deflection resistance of preformed compression joint seals at 15 and 50- percent deflection.

2. APPARATUS -

   2.1. Compression-deflection apparatus - Provide a compression device consisting of two or more flat steel plates between the parallel faces of which the specimen may be compressed. Ensure that the plates between which the test specimen is compressed are made of steel of a sufficient thickness to withstand the applicable compressive stresses without bending. Ensure that the apparatus is capable of compressing a 4-in.~~ch~~ length of preformed joint seal to 25 percent of its original width (the width of seals may vary from 0.25 in.~~ch~~ to 5 in.~~ches~~) at a rate of 1.0 in.~~ch~~ per minute. Ensure that the compression plates are large enough that the specimen does not deform beyond the sides or ends. Ensure that the applied load and specimen thickness can be determined at any point during the compression cycle. Ensure that the apparatus is capable of recording, on a chart, forces from 0.0 to 500.0 lb~~s~~.

   2.2. Knife: Provide a long, slender-blade knife that can be sharpened to a keen edge and will not leave imperfections in the cut section of the seal.

3. SAMPLE -

   3.1. Cut a test specimen at random from a 6-f~~oo~~t-long sample.

   3.2. Ensure that the test specimen is 4.0 ± 0.1 in.~~ches~~ long. Ensure that the severed end is perpendicular to the long axis of the specimen.

4. PROCEDURE –

   4.1. Ensure that the test temperature is 77 ± 4 °F.

   4.2. Place the test specimen between the compression plates in such a manner that the load will be applied evenly along its length.

   4.3. Compress the test specimen by application of the load along its sides at a constant rate of one inch per minute. Record the applied force at 15 and 50-percent deflection.

   4.4. Continue to compress the test specimen until closure of the seal occurs. Ensure that the seal does not deflect more than 70 percent of the original width before closure occurs. Consider deflections recorded in excess of 70 percent of the original seal width as failures.

4.5. Subject each specimen to three compression cycles. Obtain the required readings on the third compression cycle.

5. CALCULATIONS: Calculate the compression-deflection resistance pressure according to the following formula:

$$P = \frac{F}{LxH},$$

~~,~~ where:
P = the pressure, in ~~pounds~~ lb/in.^{2} ~~per square inch~~, at the percent of compression-deformation specified;
F = the compression force to the nearest 0.5 lb~~s~~.;
L = the length of the specimen to the nearest 0.1 in.~~ch~~; and
H = the height of the specimen to the nearest 0.1 in.~~ch~~.

6. REPORT: Report values for the pressure, P, to the precision indicated by the specifications.

APPROVED _____
Director
Division of Materials

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