



PROCEDURE FOR GM COLD IMPACT TESTER GMW14127 SPECIFICATION

Review the GMW14127 specification and its requirements before proceeding with any testing.

TEST EQUIPMENT: Stand consists of 1 station with a tube (with adjustable height) for the impact drop weight, a mechanism for releasing the drop weight, and a fixture at the base for locating the sample holder (three different holders could be used, depending upon the test needs).

CONDITIONING: Per the specification, the test samples and the test stand are to be conditioned in a cold chamber for 2 hours +/- .25 hours at a temperature of $-30^{\circ}\text{C} \pm 2^{\circ}$.

DROP WEIGHT: For Part A the drop weight shall be capable of generating an impact of 4J. For Part B the drop weight shall be capable of generating an impact level required by the material specification.

DROP HEIGHT: The drop height will be as indicated on the material specification.

PROCEDURE PART A: (Note: entire test is to be done at $-30^{\circ}\text{C} \pm 2^{\circ}$, in the cold chamber)

- 1.) Prepare the sample in accordance with specification GMW14127 or the material specification.
- 2.) Install one of the material specimens (appearance side up) over the foam block. Secure the specimen to the block by putting each of the four holes over the heads of the screws in the wooden block.
- 3.) Make the necessary adjustments are made so that the impact tester will produce 4J on impact before placing the test stand into the cold chamber. (Note: to determine the required height, measure the height from the tip of the indenter/impactor to the surface of the specimen, and use the formula $(\text{Kg}) \times (9.80665) \times (\text{height in meters}) = \text{J}$)
- 4.) Note: when handling specimens or the fixture in the cold chamber, be sure to wear gloves to protect your hands and to not transfer heat to the specimen or the fixture.
- 5.) Release the pin holding the drop weight so that the weight impacts the sample.
- 6.) Remove the specimen holder with the specimen intact, and place the next specimen on the fixture and continue until all of the tests are completed.
- 7.) Allow the specimen to remain for a minimum of 24 hours in a room conditioned to the requirements of GMW3221 Code A.
- 8.) Examine the samples as required by the specification GMW 14127.
- 9.) Complete a report on the results.

PROCEDURE PART B: (Note: entire test is to be done at $-30^{\circ}\text{C} \pm 2^{\circ}$, in the cold chamber)

- 10.) Prepare the sample in accordance with specification GMW14127 or the material specification.
- 11.) Cut one piece of fiberboard to the dimensions shown in Figure A4.

- 12.) Place one fiberboard piece on the bottom of the retaining ring of the specimen mounting fixture, see Figures A5 and A6.
- 13.) Place one specimen over the fiberboard on the bottom retaining ring (appearance side up). Align the holes on the top retaining ring to fit over the four threaded bolts on the bottom retaining ring. Secure the top retaining ring to the bottom one using four winged nuts (finger tight).
- 14.) Make the required adjustments to the height so that the impact tester will produce either 15J or 25J upon impact (use the same formula as in section 3 above). See the material specification for the required impact force.
- 15.) Note: when handling specimens or the fixture in the cold chamber, be sure to wear gloves to protect your hands and to not transfer heat to the specimen or the fixture.
- 16.) Release the pin holding the drop weight so that the weight impacts the sample.
- 17.) Remove the specimen holder with the specimen intact, and place the next specimen on the fixture and continue until all of the tests are completed.
- 18.) Allow the specimen to remain for a minimum of 24 hours in a room conditioned to the requirements of GMW3221 Code A.
- 19.) Examine the samples as required by the specification GMW 14127.
- 20.) Complete a report on the results.