



# Tension, Strength & Impact Tests

## Electrode Technical Information

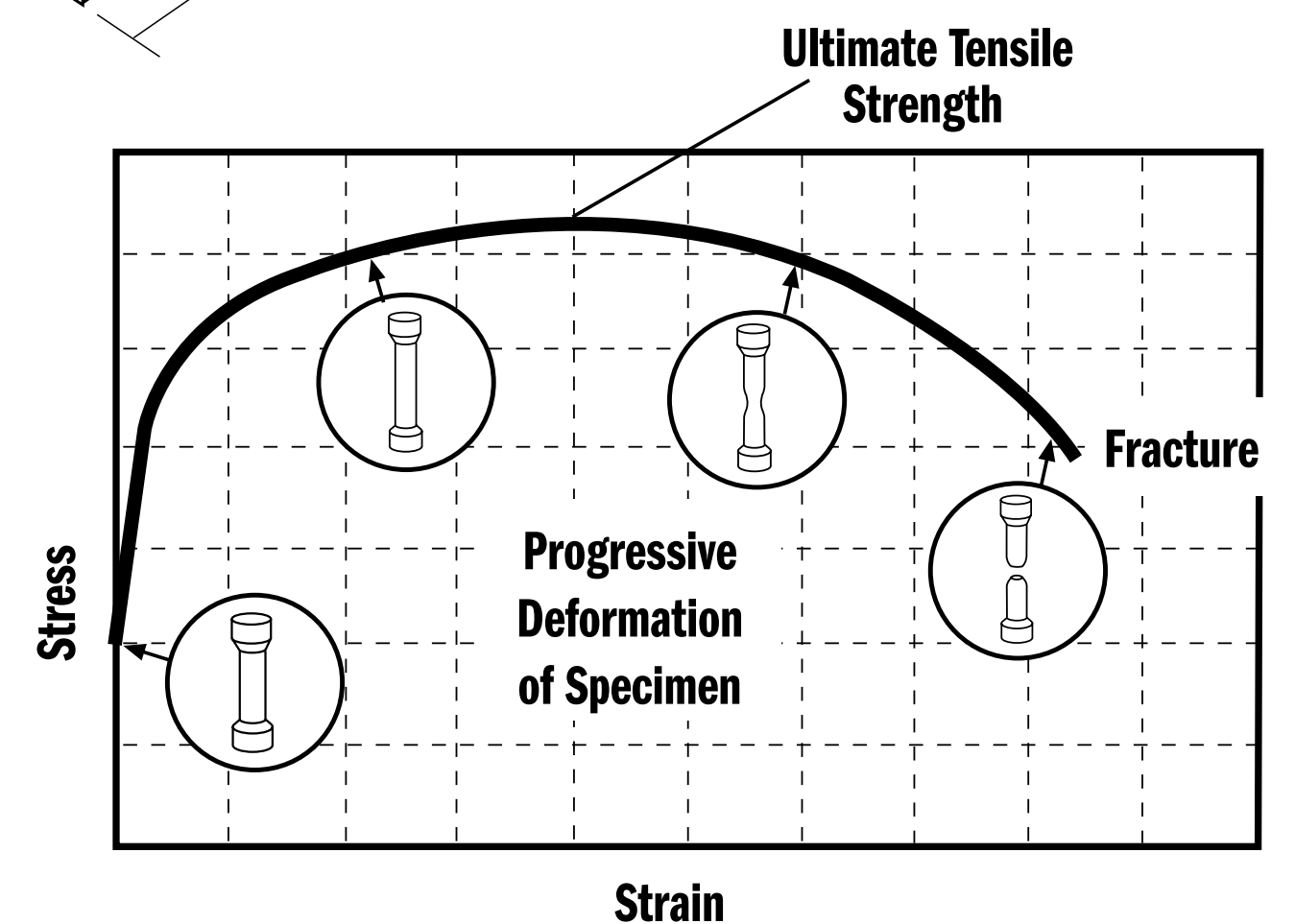
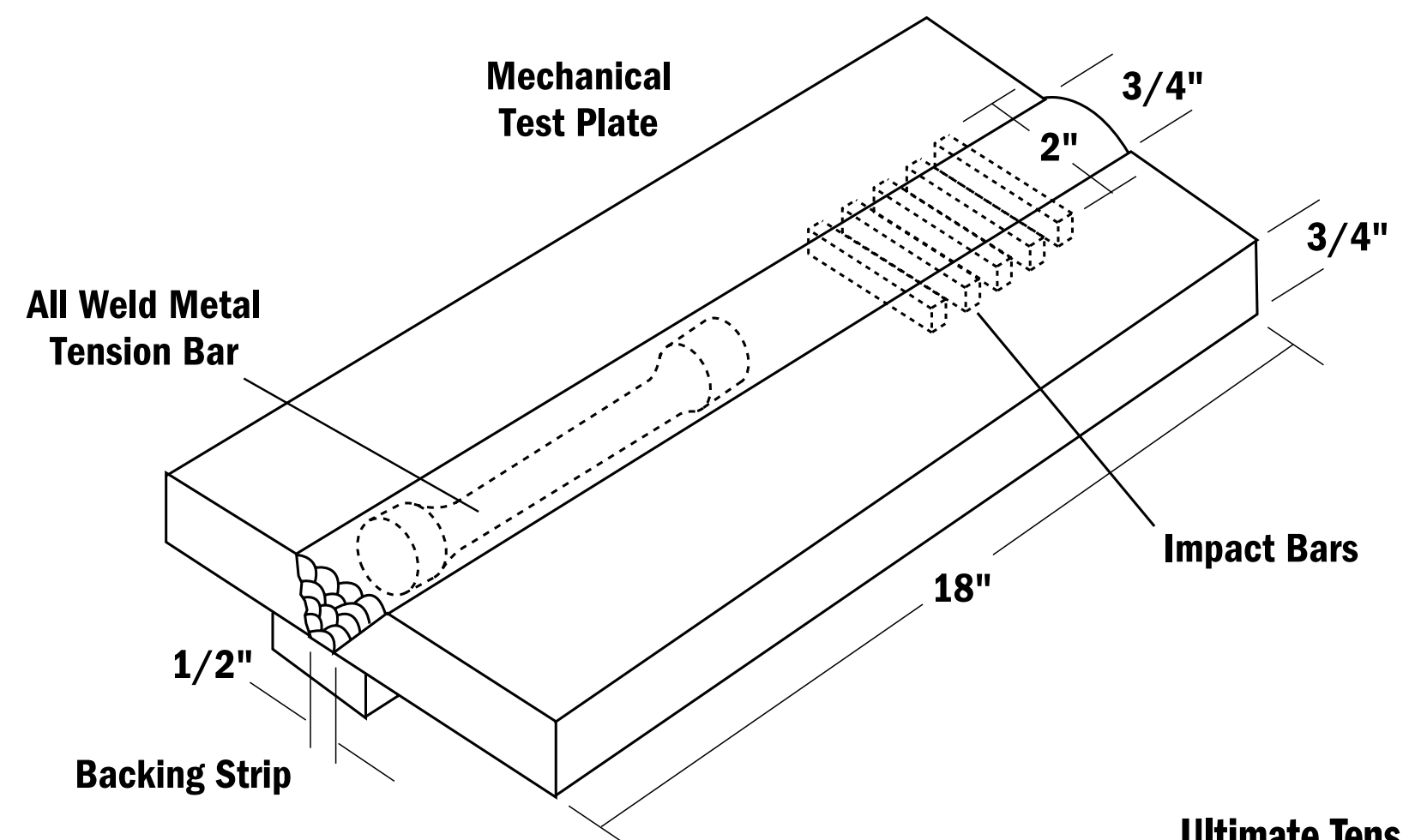
Hobart Filler Metals continue to advance the science of welding, bringing new, innovative solutions to customers around the world. Hobart is dedicated to providing the technology, the expertise and the commitment to quality required to keep pace with an evolving industry.

## All Weld Metal Tension Test

Tension testing involves deforming a structure to the point of fracture, with a gradually increasing load applied along the long axis of the specimen. The specimen is mounted into the testing machine and subjected to a load until it breaks. The test results are recorded on a chart as shown.

## Yield and Tensile Strength

When stress is applied to a metal structure, deformation or yielding occurs. Yield point is defined as the stress level at which the metal begins to deform and will not go back to its original dimension. The tensile strength is the maximum stress that can be maintained by the structure. If the stress continues, fracture will result.



## Impacts

### Impact Testing

Impact testing ascertains the fracture characteristics of materials. It is used when laboratory tensile test results cannot be used to predict fracture behavior. One of the most common impact testing techniques is the Charpy method, designed to measure impact energy, or the toughness of the metal.

### Testing Technique

The V-notch bar-shaped specimen is placed in the test machine where it is struck by a weighted pendulum hammer that deforms, cracks and fractures the specimen at the notch. The impact strength of a metal is then determined by measuring the amount of energy absorbed in the fracture.

