

C-415 W

### SYNOPSIS

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|    | Number and Title of the Indian Standard                           | IS 17413 (Part 1) : 2020/ISO 26203 – 1 : 2018 Metallic Materials — Tensile Testing At High Strain Rates - PART 1 Elastic Bar Type Systems   |
| a) | Scope   | <p>This document specifies methods for testing metallic sheet materials to determine the stress-strain characteristics at high strain rates. This document covers the use of elastic-bar-type systems.</p> <p>The strain-rate range between <math>10^{-3}</math> and <math>10^3 \text{ s}^{-1}</math> is considered to be the most relevant to vehicle crash events based on experimental and numerical calculations such as the finite element analysis (FEA) work for crashworthiness.</p> <p>In order to evaluate the crashworthiness of a vehicle with accuracy, reliable stress-strain characterization of metallic materials at strain rates higher than <math>10^{-3} \text{ s}^{-1}</math> is essential.</p> <p>This test method covers the strain-rate range above <math>10^2 \text{ s}^{-1}</math>.</p> <p>NOTE 1 At strain rates lower than <math>10^{-1} \text{ s}^{-1}</math>, a quasi-static tensile testing machine that is specified in ISO 7500-1 and <u>ISO 6892-1</u> can be applied.</p> <p>NOTE 2 This testing method is also applicable to tensile test-piece geometries other than the flat test pieces considered here.</p> |
| b) | Salient features of content                                       | Normative references, Terms and definitions, Principles, Symbols and Designation, Apparatus, Test Piece, Calibration of the Apparatus, Procedure, Evaluation of the Test Result, Test Report  |
| c) | Type/Grade/Class if any, covered in Indian Standard Specification | -   |
| d) | Disclaimer  | NIL   |