Material Standards & Specifications

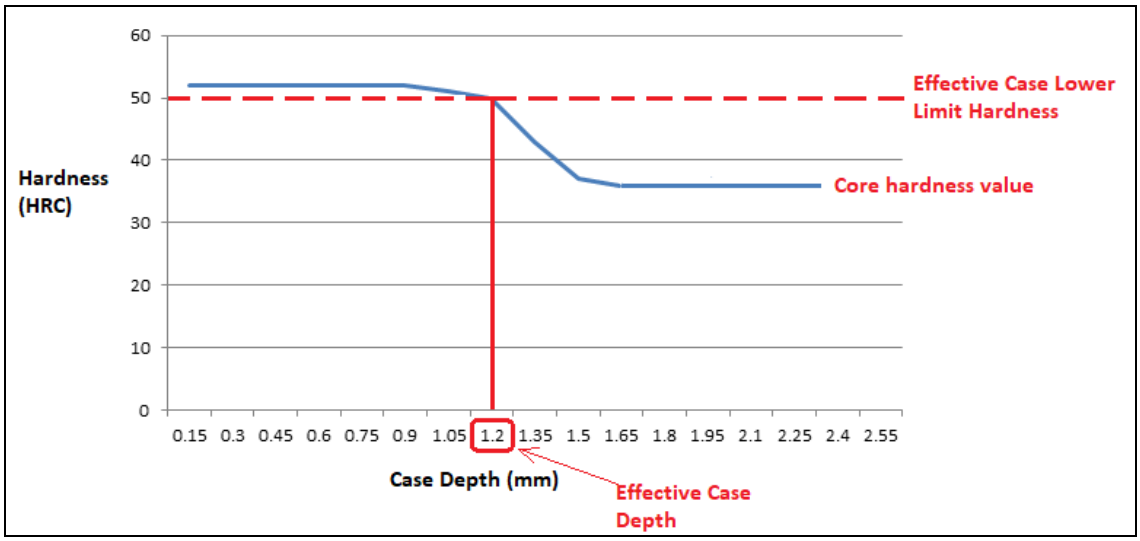
Specialty Products Company

MSS	4.014	Induction Hardened Steel Testing
Approved by:	JAW	
Revision:	A	
Date:	9/1/17	

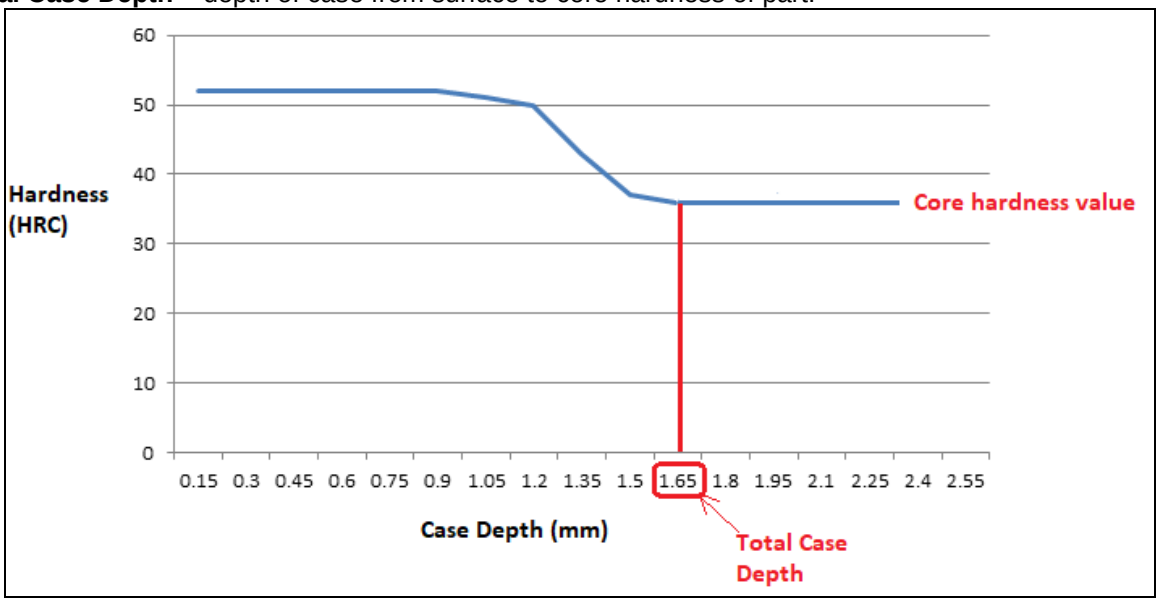
Scope:
This specification summarizes requirements for testing induction hardened steel parts.

Definitions:

1. **Effective Case Depth** – depth of case from surface of part to a specified lower limit value. 50 HRC is commonly used if lower limit is not specified. Generally depth is measured using microhardness test.



2. **Total Case Depth** – depth of case from surface to core hardness of part.



Material Standards & Specifications

Specialty Products Company

Requirements:

1. Prior to testing, parts shall be sectioned and polished along plane specified on print.

2. When Case Depth type is not specified, Total Case Depth is assumed.

3. **Total Case Depth** is typically measured by acid etching polished surface and visually measuring depth or using calibrated eye piece. Microhardness (Vickers) may also be used by taking readings at set intervals until core hardness is reached. Disputes between supplier and SPC shall be decided by microhardness test.

4. **Effective Case Depth** is measure by microhardness test

5. Where part geometry does not allow direct measurement of surface hardness, it is permissible to take a hardness reading up to 0.1mm from surface to determine surface hardness for parts with case depths greater than 0.5mm.

6. For prints where case hardness has a declare zone of tolerance, case depths outside of zone are at suppliers discretion, but subject to approval from SPC Engineering.