

# Materials Standards for P/F Steel Parts\*

## Table of Contents

Introduction .....	2
Typical Value.....	2
Chemistry .....	2
Mechanical Properties.....	2
Heat Treatment .....	3
Microstructure .....	3
P/F Material Code Designations .....	3
Additional Material Code Designations .....	3
Grade Selection .....	3
Proof Testing.....	4
Density .....	4
Impact Energy .....	4
Ultimate Tensile Strength.....	4
Yield Strength.....	4
Elongation .....	4
Reduction of Area .....	4
Compressive Yield Strength .....	4
Hardness .....	4
Fatigue Limit and Fatigue Strength.....	5
Elastic Constants .....	5
Hardenability and Jominy Curves .....	5
SI Units.....	5
Comparable Standards .....	5

### DATA TABLES – ENGLISH UNITS

Carbon Steel.....	6-7
Copper Steel.....	8-9
Low Alloy P/F-42XX Steel.....	10-11
Low Alloy P/F-46XX Steel.....	12-13
Hardenability Data and Jominy Curves .....	14-15

### DATA TABLES – SI UNITS

Carbon Steel.....	16-17
Copper Steel.....	18-19
Low Alloy P/F-42XX Steel.....	20-21
Low Alloy P/F-46XX Steel.....	22-23
SI Units for P/F.....	24

\*For structural parts made by the P/M (powder metallurgy) process, see MPIF Standard 35, "Materials Standards for P/M Structural Parts."

\*For bearings and bushings made by the P/M process, see MPIF Standard 35, "Materials Standards for P/M Self-Lubricating Bearings."

\*For P/M components made by the metal injection molding (MIM) process, see MPIF Standard 35, "Materials Standards for Metal Injection Molded Parts."