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BIBLIOGRAPHY AND INDEX OF
NAVAL APPLIED SCIENCE LABORATORY
TECHNICAL REPORTS ON HIGH STRENGTH STEELS

Lab. Project 9300-1, Progress Report 5

Task Area SF-020-01-01, Work Unit 0722
Task Area SF-020-01-02, Work Unit 0855
Task Area SF-013-03-02, Work Unit 2025

14 FEBRUARY 1967

F. Ginsberg
I. L. Stern

TECHNICAL REPORT

U. S. NAVAL APPLIED SCIENCE LABORATORY

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FLUSHING AND WASHINGTON AVENUES
BROOKLYN, NEW YORK 11251

Lab. Project 9300-1
Progress Report 5

PREFACE

1. In connection with its development work on high strength steels, the U.S. Naval Applied Science Laboratory has issued reports covering a broad range of information pertinent to fabrication of steels in the 80,000 to 210,000 psi yield strength range, with emphasis on HY-80 and HY-130 steel weldments.

2. The work represented by these reports is concerned with the transfer of basic laboratory data to production applications. Primary areas of concern are weldability, welding procedures and materials, static and dynamic mechanical properties (including large scale fatigue), explosion bulge properties, forming, stress relieving and residual stress measurements.

3. To facilitate utilization of the data developed, the information has been arranged as follows:

a. A bibliography containing a listing of reports by title and date and a short description of content.

b. A detailed subject index.

c. Identification of commercial activity participants, when applicable.

4. This document was prepared with the contract assistance of the Engineering Societies Library of New York, New York.

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Evaluation of experimental submerged arc wire and flux by mechanical and explosion bulge data.

TM 2 10/17/63

Effect of Embrittled 110-18 Weld Metal on the Fatigue Life of HY-80 Steel Butt Weldments.

Effects of welding on the fatigue properties of HY-80.

TM 3 11/5/63

Short Arc M. I. G. Vertical Position Welding of 2" HY-80 Steel.

Evaluation of weldments fabricated by the M. I. G. short arc out of position welding process by explosion bulge and other related metallurgical and mechanical test data.

TM 4 11/12/63

Comparison of Explosion Bulge Properties of 110-18 Weldments in STS and HY-100 Steels.

Investigation of properties of weldments in STS and HY-100 steel plate by explosion crack starter and bulge tests.

TM 5 12/11/63

Semi-Automatic Inert-Gas Metal Arc (MIG) Welding of HY-80, Linde 103 Filler Wire.

Investigation of mechanical and explosion crack starter and bulge properties of "Linde 103" semi-automatic inert gas metal arc welds in the flat position.

TM 6 11/26/63

Effects of Residual Stresses on the Structural Performance of Extruded and Cold Formed HY-80 Steel Tee Bars.

Determination of effects of residual stresses developed during fabrication on structural behavior of cold-formed and welded HY-80 structural members.

TM 7 1/6/64

Effects of Fatigue on the Explosion Bulge Properties of HY-80 Butt Weldments.

Determination of effects of fatigue on explosion bulge performance of HY-80 steel weldments.

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TM 8 1/30/64
Weldability of I-N 100 (135,000 PSI YS) Structural Steel.
Investigation of base plate and weldability of I-N100. Includes composition, mechanical and Charpy-V notch data.

TM 9 2/13/64
Explosion Crack Starter Survey, CVA 66, 70# STS Deck Weldments.
Comparison of explosion crack starter and Charpy V-notch properties of weldments from various stages of construction of the CVA 66 flight deck.

TM 10 6/1/64
Comparison of Properties of 110-18 Weldments in STS and HY-100 Steel.
Tensile, Charpy V-notch, explosion crack starter and bulge data.

TM 12 8/7/65
"Narrow Gap" Welds in 2" HY-80 Steels.
Crack starter and explosion bulge data on "narrow-gap" welds.

TM 13 7/27/64
Investigation of the HP 150 Steel-Filler Wire System for High Strength Steel Fabrication.
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TM 14 9/10/64
Effects of Forming on the Structural Performance of Cold-Formed HY-80 Rolled Steel Tee Bars.
Effects of cold forming (residual stress, etc.) on structural performance of rolled tee sections and welded assemblies.

TM 16 8/11/64
Properties of I-N 100 (135,000 YS) Steel Weldments.
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TM 17 10/15/64
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Effect of cold forming and thermal stress relief on yield strength at locations through depth of extruded tee section. Also cold forming and thermal stress relief on Charpy V.

TM 18 9/30/64
Effects of Grinding and Shot Peening on Fatigue Life of Tee Weldments.
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TM 19 12/14/64
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TM 21 11/10/64
Investigation of the 12% Nickel Maraging Steel Filler Wire.
Weldability of 12% nickel maraging steel alloy.

TM 22 11/25/64
Properties of 130,000 to 150,000 PSI Yield Strength Weldments Using Experimental Filler Wire (LLR1).
Charpy V-, explosion bulge and tensile data.

TM 23 12/17/64
Welding Procedures for HY-100 Steel.
Explosion bulge, Charpy V-notch and tensile test data.

TM 24 1/18/65
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Drop weight data on mechanically peened steel plate and weld deposit.

TM 25 1/22/65
Short Arc MIG, Out-of-Position Welding of HY-80 Steel.
Charpy V- and tensile data on base plate and weldment.

TM 26 2/2/65
Effect of Welding on the Fatigue Properties of HY-100 Steel Tee-Fillet Welded Plates in As-Welded Condition.
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TM 27 5/25/65
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Effect of cold forming on structural performance in as-formed, stress-relieved and welded conditions.

TM 28 3/2/65
HY-180/210 Steels; Investigation of HP 9-4-25 Weld Deposit.
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TM 29 4/1/65
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Evaluation of weldments based on tensile and Charpy V-notch data. Also soundness by radiographic examination.

TM 31 6/14/65

Effect of Welding on the Fatigue Properties of HY-100 Steel Tee-Fillet Welded Plates Mechanically Peened.

Fatigue data at various stress levels of welds treated by NASL mechanical peening process.

TM 32 7/9/65

Exploratory Approach for Determination of Susceptibility to Environmental Stress Cracking of High Strength Alloys.

Environmental stress corrosion screening test method for determining susceptibility to stress corrosion cracking in high strength metals.

TM 33 6/28/65

Effect of Stress Relieving on the Toughness (Charpy V) and Mechanical Properties of HY-100 Steel Tee Beams, Hot Rolled, Extruded and Cold Formed.

Effects of stress-relieving on yield strength and Charpy V-notch characteristics.

TM 34 8/11/65

NASL Mechanical Peening Procedure for Improvement of Fatigue Properties of HY-80 Butt Welds.

Influence of mechanical peening on fatigue life of HY-80 butt weld; explosion bulge data of peened butt weld subjected to bending fatigue.

TM 35 6/25/65

Development of the NASL Circular Fillet Weldability (NCFW) Test.

NASL circular fillet weldability test (NCFW) with preliminary results on naval structural steels (HY-80, STS, HY-130/150).

TM 36 6/29/65

HY-180/210 Steels, Explosion Bulge Testing of 9Ni-4Co Type Steel Alloy Weldments.

Explosion bulge, Charpy V-notch, and tensile data on 9Ni-4Co alloy steel weldment produced by automatic TIG welding process.

TM 37 10/14/65

Effects of Forming on Structural Performance of Cold-Formed HY-100 Extruded Steel Tee-Bars.

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TM 38 8/31/65

Effect of the NASL Mechanical Peening Process on the Properties of HY-80/MIL-110-18 Weldments.

Evaluation of effect of NASL mechanical peening process on drop weight, hardness and ductility.

TM 39 9/16/65

Crack Growth Properties of Welds in HY-80, HY-100 and HY-130/150 High Strength Steels in a Sea Water Environment.

Experimental work performed on welded high strength steel plate subjected to corrosive effects of sea water under cyclical and static loading.

TM 40 12/13/65

Fatigue Life of HY-130/150 Steel Base Plates.

Fatigue data on HY-130/150 base plate tested at a nominal stress range of 0 to 140,000 psi in flexure.

TM 41 5/31/66

MIG and TIG Welding of HY-130/150 Steels (As Welded and Stress Relieved Weldments).

Data on Charpy V-notch, yield strength, hardness and side bends of weldments. Also effects of stress relief on toughness.

TM 42 6/1/66

Procedures for MIG Welding HY-130/150 Steels.

Mechanical and explosion bulge properties of weldments produced with MIG filler wires.

TM 43 6/14/66

Investigation of Fatigue Life of HY-130/150 Steel.

Fatigue data on 130/150 base plate tested at nominal stresses of 0 to 120,000 psi and 0 to 100,000 psi in flexure.

TM 44 6/17/66

Exploratory Approach for Screening High Strength Steels for Susceptibility to Environmental Stress Cracking.

Slow bend test on fatigue cracked Charpy V-notch specimen for determination of susceptibility to environmental stress cracking.

TM 45 7/5/66

Investigation of Applicability of Pulsed Arc Process for Welding HY-80 and HY-130/150 (5% Ni) Steel Alloys.

Explosion bulge, Charpy V-notch, tensile and bend data on weldments produced by pulsed arc welding process.

TM 46 7/1/66

An Optical Autocollimation Method for Evaluation of Stress-Relief Treatments for High-Strength Steel Weldments.

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TM 47 6/28/66

Effects of Stress Relief on the Toughness of HY-130/150 Base Plate and Weld Metal.

Charpy V-notch data on base plate and weldments stress relieved.

TM 48 6/24/66

HY-180/210 Steels, Explosion Bulge Testing of 9Ni-4Co Type Steel Weldment

Explosion bulge, Charpy V-notch and tensile data on weldments produced by manual TIG welding process.

TM 49 8/11/66

Weldability of HY-130/150 Steel Covered Electrodes.

Study of cracking tendency of the HY-130/150 steel covered electrode system.

TM 50 8/22/66

Investigation of 12% Nickel Maraging Steels and Filler Wire System for High Strength Steel Fabrication.

Study of weldment properties obtained with various experimental 12% nickel maraging steels and filler wires.

TM 51 10/3/66

Investigation of Corrosion Fatigue and Stress Corrosion Properties of HY-130/150 Steel.

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TM 52 9/2/66

Procedures for Covered Electrode Metallic Arc Welding of HY-130/150 Steels.

Determination of potential shipyard applicability of HY-130/150 steel-covered electrode system for fabrication of HY-130/150 steel hulls for surface ships and submarine applications.

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PR 2 1/13/65

Effect of Pickling on Notch-Toughness and Surface Pitting of HY-80/100 Type Steel Plate.

PR 3 8/2/65

Welding Electrodes for HY-100 Steel

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Development of repair welding procedure for high strength, Class I, steel shafting with adequate static and fatigue properties.

PR 2 8/31/65

Weldability of Nickel Modified Hadfield Steel Chain Links.

Suitability of automatic flash butt welding nickel modified Hadfield steel chain links; development of manual welding procedure for field repairs.

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Procedures for Minimizing the "As-Welded" Hardness of the Heat Affected Zones in Hardenable Steels.

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PR 1 9/9/59

Weldability and Fatigue Properties of HY-80 Alloy Structural Steel Plate.

Dynamic beam and hydrostatic plate fatigue properties. Also Charpy V-notch and tensile data.

PR 2 10/15/62

Effects of Various Weld Flaws on the Fatigue Properties of HY-80 Butt and Fillet Weld Assemblies.

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PR 1 9/9/59

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PR 2 4/15/60

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PR 3 7/17/61

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PR 4 4/23/62

Properties of HY-80 Steel; Virgin Plate-Report on Fatigue of.
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PR 5 12/17/62

Effects of Welding on the Fatigue Properties of High Yield Strength Steels; British QT-35 Tee Fillet Welded Plate-Report on Fatigue.
Data on fatigue studies of British QT-35 steel tee fillet welded plates; comparison with tee-fillet welded HY-80 plate.

PR 6 1/3/63

Fatigue of Iron Base Alloys--Tee-Fillet Welds in HY-80 Plate Fatigue Tested in Compression.
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PR 7 6/28/63

Fatigue of Iron Base Alloys--HY-80 Steel, Cast Tee.
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Fatigue of Iron Base Alloys--HY-80 Steel, Rolled Plate to Cast Plate Butt Welds; Peened Tee-Fillet and Ground Tee-Fillet Welds.
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PR 1 3/21/63

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"Blast-Steel"; Wheelabrator Corporation, Mishawaka, Indiana, Pre-Weld Primer for HY-80 Steel.

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HY-80 and HY-100 Steels, Weldability of.

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PR 2 5/19/61

HY-80 (Spec. MIL-S-16216); Determination of Effects of Weld Fabrication Variables on Mechanical Properties of Weldments.

Crack starter explosion tests on welds with various interpass temperatures and heat inputs.

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PR 2 8/6/62
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9300-1 TM37 Forming : Cold-formed HY-100 extruded steel tee-bars
6160-6 PR1 Residual stresses : Extruded : Cold-formed HY-80 : Tee-bars

Bend machine, Manlabs slow see MANLABS SLOW BEND MACHINE, MODEL SB-750

BEND TESTS see also subdivision MECHANICAL PROPERTIES under various types of ELECTRODES and STEELS and under FILLER METAL and WELD DEPOSITS
9300-1 TM1 HY-80 : Submerged arc weldment : A309 flux : LL1 wire : Explosion bulge
9300-1 TM3 Short arc MIG : Vertical position welding : HY-80
9300-1 TM5 Semi-automatic : MIG : HY-80 : Linde 103 filler wire
9300-1 TM6 Residual stresses : Extruded : Cold-formed : HY-80 : Tee-bars
9300-1 TM10 Properties : 110-18 : STS : HY-100
9300-1 TM13 HP-150 steel-filler wire system
9300-1 TM14 Effects of forming : Cold-formed HY-80 rolled-steel tee-bars
9300-1 TM16 Properties : I-N 100 (135,000 psi yield strength)
9300-1 TM22 Properties : 130 to 150,000 psi : Steel weldments : Filler wire (LLR1)
9300-1 TM23 Welding : HY-100
9300-1 TM25 Short arc MIG : Out-of-position welding : HY-80
9300-1 TM27 Effects of forming : Cold-formed HY-100 rolled-steel tee-bars
9300-1 TM34 Mechanical peening : Fatigue properties : HY-80 butt welds
9300-1 TM37 Forming : Cold-formed HY-100 extruded steel tee-bars
9300-1 TM38 Peening : Properties : HY-80/MIL-11018 weldments
9300-1 TM41 MIG and TIG welding : HY-130/150 : As welded : Stress relieved
9300-1 TM42 MIG welding : HY-130/150
9300-1 TM44 Screening high strength steels : Environmental stress cracking
9300-1 TM45 Pulsed arc process : Welding : HY-80 : HY-130/150 (5% Ni)
9300-1 TM49 Weldability : HY-130/150 steel covered electrodes
9300-1 TM52 Covered electrode : Metallic arc welding : HY-130/150
9300-1 PR3 Welding electrodes : HY-100
9300-39 PR1 Welding repair procedure : Class 1, nickel-molybdenum steel shafting
6160-6 PR1 Residual stresses : Extruded : Cold-formed HY-80 : Tee-bars
6285-3 FR Mechanical properties : Iron alloys : Explosion bulge tests : Heat treatable electrodes
6285-6 PR2 Notch-toughness properties : MIL-260 welds : STS plate
6285-14A FR Cast HY-80 steel plates : Birdsboro Corp.
6285-15 FR British steel QT-35 weldments : Explosion bulge testing

BITHERMAL WELDS

9300-1 TM29 Comparative weldability : 50,000 to 150,000 psi yield strength steels : Controlled thermal severity (CTS) test

"BLAST-SEEL" PRIMER

6160-7 FR "Blast-Seel" : Wheelabrator Corp.: Pre-weld primer : HY-80

Butt welding see WELDING PROCESSES -- FLASH BUTT

BUTT WELDS

9300-1 TM2 Embrittled 110-18 weld metal : Fatigue life : HY-80 : Butt weldments
9300-1 TM3 Short arc MIG : Vertical position welding : HY-80
9300-1 TM5 Semi-automatic : MIG : HY-80 : Linde 103 filler wire
9300-1 TM7 Fatigue : Explosion bulge properties : HY-80 : Butt weldments
9300-1 TM8 Weldability : I-N 100 (135,000 psi yield strength)
9300-1 TM9 Explosion crack-starter : CVA 66 : STS
9300-1 TM12 "Narrow-Gap" welds : HY-80
9300-1 TM13 HP-150 steel-filler wire system
9300-1 TM16 Properties : I-N 100 (135,000 psi yield strength)
9300-1 TM19 Fatigue : HY-80 : Cast tees butt welded to rolled section single and double weld joint design
9300-1 TM21 12% nickel maraging steel-filler wire system
9300-1 TM22 Properties : 130 to 150,000 psi : Steel weldments : Filler wire (LLR1)
9300-1 TM25 Short arc MIG : Out-of-position welding : HY-80
9300-1 TM30 HY-180/210 : HP 9-4-25 : 7-½ Ni-4Co-Cr, Mo weld deposits
9300-1 TM34 Mechanical peening : Fatigue properties : HY-80 butt welds
9300-1 TM38 Peening : Properties : HY-80/MIL-110-18 weldments
9300-1 TM39 Crack growth properties : HY-80, HY-100, HY-130/150 : Sea water environment
9300-1 TM41 MIG and TIG welding : HY-130/150 : As welded : Stress relieved
9300-1 TM42 MIG welding : HY-130/150
9300-1 TM45 Pulsed arc process : Welding : HY-80 : HY-130/150 (5% Ni)
9300-1 TM48 HY-180/210 : Explosion bulge testing : 9Ni-4Co type steel weldment
9300-1 TM49 Weldability : HY-130/150 steel covered electrodes
9300-1 TM50 12% nickel maraging steels : Filler wire system
9300-1 TM51 Corrosion fatigue : Stress corrosion properties : HY-130/150
9300-1 TM52 Covered electrode : Metallic arc welding : HY-130/150
9300-1 PR3 Welding electrodes : HY-100
9300-39 PR1 Welding repair procedure : Class 1, nickel-molybdenum steel shafting
6160-1 PR2 Weld flaws : Fatigue properties : HY-80 : Butt and fillet weld
6160-2 PR3 Welding : Fatigue properties : HY-80
6160-2 PR4 Welding : Fatigue properties : HY-80 : Virgin plate
6160-2 PR7 Fatigue : Iron base alloys : HY-80 : Cast tee

BUTT WELDS (continued)
6160-2 Fatigue : Iron base alloys : HY-80 : Rolled plate to cast plate butt welds : Peened tee fillet : Ground tee fillet welds
6285-1 PR1 HY-80 and HY-100 : Weldability
6285-1 PR2 HY-80 plate : Weld fabrication variables : Mechanical properties
6285-4 FR Weldability : Cast HY-80
6285-6 PR2 Notch-toughness properties : MIL-260 welds : STS plate
6285-8 FR STS plate : Grade 110-18 electrodes : Explosion bulge properties
6285-9 FR Notch-toughness properties : Welds : CVA-63 (Kitty Hawk)
6285-12 PR1 STS weldments : Explosion bulge tests
6285-12 FR Notch-toughness properties : STS weldments : Explosion crack-starter tests
6285-22 FR Forgings . HY-80 : Ladish Co. : Explosion bulge testing
6285-25 FR HY-100 : Rolled plate : Armco-Sheffield steel

CTS weldability test see CONTROLLED THERMAL SEVERITY (CTS)

CVA-63 FLIGHT DECK
6285-9 FR Notch-toughness properties : Welds : CVA-63 (Kitty Hawk)

CVA-64 FLIGHT DECK
6285-9 FR Notch-toughness properties : Welds : CVA-63 (Kitty Hawk)

CVA-66 FLIGHT DECK
9300-1 TM9 Explosion crack-starter : CVA-66 : STS

Castings see STEELS -- HY-80, CAST; TEE-SECTIONS -- CAST

CHAIN LINKS
9300-39 PR2 Weldability : Nickel modified Hadfield steel chain links

CHARPY V-NOTCH see also subdivision MECHANICAL PROPERTIES under various types of STEELS, FILLER METAL, WELD DEPOSITS, ELECTRODES
9300-1 TM1 HY-80 : Submerged arc weldment : A309 flux : LL1 wire : Explosion bulge
9300-1 TM3 Short arc MIG : Vertical position welding : HY-80
9300-1 TM8 Weldability : I-N 100 (135,000 psi yield strength)
9300-1 TM9 Explosion crack-starter : CVA-66 : STS
9300-1 TM10 Properties : 110-18 : STS : HY-100
9300-1 TM13 HP-150 steel-filler wire system
9300-1 TM16 Properties : I-N 100 (135,000 psi yield strength)
9300-1 TM17 Cold-forming properties : HY-80 steel tee-section extrusions
9300-1 TM21 12% nickel maraging steel-filler wire system
9300-1 TM22 Properties : 130 to 150,000 psi : Steel weldments : Filler wire (LLR1)
9300-1 TM23 Welding : HY-100
9300-1 TM25 Short arc MIG : Out-of-position welding : HY-80
9300-1 TM28 HY-180/210 : HP 9-4-25 weld deposit
9300-1 TM30 HY-180/210 : HP 9-4-25 : 7½ Ni-4Co-Cr, Mo weld deposits
9300-1 TM33 Stress relieving : Toughness (Charpy V) : Mechanical properties : HY-100 steel tee-beams hot rolled, extruded and cold-formed

CHARPY V-NOTCH (continued)

9300-1 TM41 MIG and TIG welding : HY-130/150 welds : As welded : Stress relieved
9300-1 TM42 MIG welding : HY-130/150
9300-1 TM44 Screening high-strength steels : Environmental stress cracking
9300-1 TM45 Pulsed arc process : Welding : HY-80 : HY-130/150 (5% Ni)
9300-1 TM47 Stress relief : Toughness : HY-130/150 base plate and weld metal
9300-1 TM48 HY-180/210 : Explosion bulge testing : 9Ni-4Co steel weldment
9300-1 TM52 Covered electrode : Metallic arc welding : HY-130/150
9300-1 PR1 Peening : Improvement : Fatigue properties : HY-80
9300-1 PR3 Welding electrodes : HY-100
9300-39 PR1 Welding repair procedure : Class 1, nickel-molybdenum steel shafting
6160-1 PR1 Weldability : Fatigue properties : HY-80
6160-2 PR4 Welding : Fatigue properties : HY-80 : Virgin plate
6285-3 FR Mechanical properties : Iron alloys : Explosion bulge tests : Heat treatable electrodes
6285-4 FR Weldability : Cast HY-80
6285-5 FR Explosion bulge properties : HY-80 : Electro-slag welding process
6285-5S FR Explosion bulge performance : Mechanical properties : HY-80 weldments : Electro-slag process
6285-6 PR1 STS plating : Grade 260 electrode : Explosion evaluation
6285-6 PR2 Notch toughness properties : MIL-260 welds : STS plate
6285-7 FR Explosion bulge performance : HY-80 weldments : Submerged arc process
6285-8 FR STS plate : Grade 110-18 electrodes : Explosion bulge properties
6285-9 FR Notch-toughness properties : Welds : CVA-63 (Kitty Hawk)
6285-10 FR Explosion bulge performance : HY-80 weldments : Vertical position : MIG process
6285-11 FR Forged HY-80 : Isaacson Iron Works : Explosion bulge testing
6285-12 FR Notch-toughness properties : STS weldments : Explosion crack-starter tests
6285-13 FR Cast HY-80 : American Brake Shoe Co.
6285-14 FR Cast HY-80 : Birdsboro Corp. : Explosion bulge testing
6285-14A FR Cast HY-80 steel plates :Birdsboro Corp.
6285-15 FR British steel QT-35 weldments : Explosion bulge testing
6285-18 PR1 Forgings of HY-80 : Midvale-Heppenstall Co.
6285-19 FR HY-80 castings : Bonney-Floyd Co. : Explosion bulge tests
6285-19A FR Cast HY-80 steel plates : Bonney-Floyd Co.
6285-20 FR HY-80 submerged-arc : Flux (Unionmelt 103) : Electrode (Oxweld 103) : Linde Co. : Explosion bulge tests
6285-21 FR Hot rolled (HY-80) : Bethlehem Steel Co. : Explosion bulge tests
6285-22 FR Forgings : HY-80 : Ladish Co. : Explosion bulge testing
6285-23 PR1 HY-80 extrusions : Curtiss-Wright Metal-Processing Div. : Forged billet : Crucible Steel of Canada, Ltd.

CHARPY V-NOTCH (continued)

6285-23 PR2 Extrusions, HY-80 : Atlas Welland Co. : Cast billet : Curtiss-Wright Corp., Metals Processing Division : Explosion bulge tests

6285-23 FR Extrusions, HY-80 : Curtiss-Wright Corp., Metals Processing Division : Isaacson Iron Works : Forged billet : Explosion bulge tests

6285-24 Rolled HY-80 : Sheffield Division, Armco Steel Corp.

6285-25 FR HY-100 : Rolled plate : Armco-Sheffield steel

6285-26 FR Cast HY-80 steel plates : Lebanon Steel Foundry

6285-27 FR HY-80 steel extrusions : Curtiss-Wright Corp., Metals Processing Division : American Steel Foundries : Cast billet

6285-28 FR Cast HY-80 steel plates : Standard Steel Works

Chemical analysis see subdivision CHEMICAL ANALYSIS under types of ELECTRODES and STEELS and under FILLER METAL, TEE-SECTIONS, TITANIUM ALLOYS and WELD DEPOSITS

CIRCULAR FILLET WELDABILITY (NCFW) TEST

9300-1 TM35 NASL circular fillet weldability (NCFW) test

9300-1 TM49 Weldability : HY-130/150 steel covered electrodes

9300-1 PR4 Weldability : HY-130/150 steel and MIG filler wires

Coatings see PRIMERS (COATINGS)

COLD FORMING

9300-1 TM6 Residual stresses : Extruded : Cold-formed : HY-80 : Tee-bars

9300-1 TM14 Effects of forming : Cold-formed HY-80 rolled-steel tee-bars

9300-1 TM17 Cold-forming properties : HY-80 steel tee-section extrusions

9300-1 TM27 Effects of forming : Cold-formed HY-100 rolled-steel tee-bars

9300-1 TM33 Stress relieving : Toughness (Charpy V) : Mechanical properties : HY-100 steel tee-beams hot rolled, extruded and cold-formed

9300-1 TM37 Forming : Cold-formed HY-100 extruded steel tee-bars

6160-6 PR1 Residual stresses : Extruded : Cold-formed HY-80 : Tee-bars

Cold laps see WELDS -- FUSION INCOMPLETE

Cold working see COLD FORMING

COMPRESSION

6160-2 PR6 Fatigue : Iron base alloys : Tee-fillet welds : HY-80 : Compression

CONTROLLED THERMAL SEVERITY (CTS)

9300-1 TM20 HY-130/150

9300-1 TM29 Comparative weldability : 50,000 to 150,000 psi yield strength steels : Controlled thermal severity (CTS) test

9300-1 TM49 Weldability : HY-130/150 steel covered electrodes

9300-1 PR4 Weldability: HY-130/150 steel and MIG filler wires

CORROSION (AIR)
9300-1 TM44 Screening high-strength steels : Environmental stress cracking
9300-1 TM51 Corrosion fatigue : Stress corrosion properties : HY-130/150

Corrosion -- Environmental stress see STRESS CORROSION

Corrosion screening test, Environmental stress see ENVIRONMENTAL STRESS CORROSION SCREENING TEST

CORROSION (SEA WATER)
9300-1 TM32 High-strength alloys : Environmental stress cracking
9300-1 TM39 Crack growth properties : HY-80, HY-100 and HY-130/150 : Sea water environment
9300-1 TM44 Screening high-strength steels : Environmental stress cracking
9300-1 TM51 Corrosion fatigue : Stress corrosion properties : HY-130/150
9300-39 PR2 Weldability : Nickel modified Hadfield steel chain links
6160-2 PR3 Welding : Fatigue properties : HY-80

Corrosion -- Stress see STRESS CORROSION

Covered electrodes see ELECTRODES -- COVERED

Cracking -- Delayed see CRACKING -- RESTRAINT

CRACKING -- RESTRAINT
9300-1 TM35 NASL circular fillet weldability (NCFW) test

Cracking test, Environmental stress see ENVIRONMENTAL STRESS CORROSION SCREENING TEST; TEAR TEST

CRACKING -- THERMAL
9300-1 TM29 Comparative weldability : 50,000 to 150,000 psi yield strength steels : Controlled thermal severity (CTS) test
9300-1 PR4 Weldability: HY-130/150 steel and MIG filler wires

CURVED BEAMS
9300-1 TM14 Effects of forming : Cold-formed HY-80 rolled-steel tee-bars
9300-1 TM17 Cold-forming properties : HY-80 steel tee-section extrusions
9300-1 TM27 Effects of forming : Cold-formed HY-100 rolled-steel tee-bars
9300-1 TM33 Stress relieving : Toughness (Charpy V) : Mechanical properties : HY-100 steel tee-beams hot rolled, extruded and cold formed
9300-1 TM37 Forming : Cold-formed HY-100 extruded steel tee-bars
6160-6 PR1 Residual stresses : Extruded : Cold-formed HY-80 : Tee-bars

DATMOBAS hole drilling technique see STRESSES, RESIDUAL -- MEASUREMENT -- HOLE DRILLING METHOD

David Taylor Model Basin hole drilling technique see STRESSES, RESIDUAL -- MEASUREMENT -- HOLE DRILLING METHOD

Delayed cracking see CRACKING -- RESTRAINT

Deposited metal see WELD DEPOSITS

DISCONTINUITY
9300-1 TM49 Weldability : HY-130/150 steel covered electrodes

DISTORTION MEASUREMENT
9300-1 TM46 Optical autocollimation method : Stress-relief treatments : High-strength steel weldments

DROP WEIGHT (NDT)
9300-1 TM13 HP-150 steel-filler wire system
9300-1 TM24 Mechanical peening : Nil-ductility transition temperature : HY-80 : MIL-110-18 weld deposit
9300-1 TM38 Peening ; Properties : HY-80/MIL-110-18 weldments
6285-3 FR Mechanical properties : Iron alloys : Explosion bulge tests : Heat treatable electrodes
6285-4 FR Weldability : Cast HY-80
6285-11 FR Forged HY-80 : Isaacson Iron Works : Explosion bulge testing
6285-13 FR Cast HY-80 : American Brake Shoe Co.
6285-14 FR Cast HY-80 : Birdsboro Corp. : Explosion bulge testing
6285-14A FR Cast HY-80 steel plate : Birdsboro Corp.
6285-15 FR British steel QT-35 weldments : Explosion bulge testing
6285-16 FR HY-150 steel plate : Explosion bulge (crack-starter)
6285-18 PR1 Forgings of HY-80 : Midvale-Heppenstall Co.
6285-19 FR HY-80 castings : Bonney-Floyd Co. : Explosion bulge tests
6285-19A FR Cast HY-80 steel plates : Bonney-Floyd Co.
6285-21 FR Hot rolled (HY-80) : Bethlehem Steel Co. : Explosion bulge tests
6285-22 FR Forgings : HY-80 : Ladish Co. : Explosion bulge testing
6285-23 PR1 HY-80 extrusions : Curtiss-Wright Metal Processing Div. : Forged billet : Crucible Steel of Canada, Ltd.
6285-23 PR2 Extrusions, HY-80 : Atlas Welland Co. : Cast billet : Curtiss-Wright Corp., Metals Processing Division : Explosion bulge tests
6285-23 FR Extrusions, HY-80 : Curtiss-Wright Corp., Metals Processing Division : Isaacson Iron Works : Forged billet : Explosion bulge tests
6285-24 Rolled HY-80 : Sheffield Division, Armco Steel Corp.
6285-25 FR HY-100 : Rolled plate : Armco-Sheffield steel
6285-26 FR Cast HY-80 steel plates : Lebanon Steel Foundry
6285-27 FR HY-80 steel extrusions : Curtiss-Wright Corp., Metals Processing Division : American Steel Foundries : Cast billet
6285-28 FR Cast HY-80 steel plates : Standard Steel Works

Dynamic beam fatigue tests see FATIGUE TESTS -- DYNAMIC BEAM

Electric furnace melting see MELTING PROCESSES -- ELECTRIC FURNACE

ELECTRODES <u>see also</u> FILLER METAL; WELD DEPOSITS

ELECTRODES -- COVERED
9300-1 TM8 Weldability : I-N 100 (135,000 psi yield strength)
9300-1 TM23 Welding : HY-100
9300-1 TM29 Comparative weldability : 50,000 to 150,000 psi yield strength steels : Controlled thermal severity (CTS) test
9300-1 TM35 NASL circular fillet weldability (NCFW) test
9300-1 TM49 Weldability : HY-130/150 steel covered electrodes
9300-1 TM52 Covered electrode : Metallic arc welding : HY-130/150
9300-1 PR3 Welding electrodes : HY-100
6285-12 PR1 STS weldments : Explosion bulge tests

ELECTRODES -- ELECTRIC FURNACE MELTED CORE WIRE
9300-1 TM49 Weldability : HY-130/150 steel covered electrodes

ELECTRODES -- HEAT TREATABLE
6285-3 FR Mechanical properties : Iron alloys : Explosion bulge tests : Heat treatable electrodes

ELECTRODES -- VACUUM INDUCTION MELTED CORE WIRE
9300-1 TM49 Weldability : HY-130/150 steel covered electrodes

ELECTRODES -- 14N
6285-17 FR HY-80 submerged arc weldments : Experimental flux L-732 : Experimental filler wire 14N : Battelle Memorial Institute

ELECTRODES -- 195W (NICKEL, CHROMIUM, MANGANESE)
9300-39 PR2 Weldability : Nickel modified Hadfield steel chain links

ELECTRODES -- A632
6285-12 PR1 STS weldments : Explosion bulge tests
6285-12 FR Notch-toughness properties : STS weldments : Explosion crack-starter tests

ELECTRODES -- L-100
9300-1 TM8 Weldability : I-N 100 (135,000 psi yield strength)
9300-1 TM16 Properties : I-N 100 (135,[illegible] yield strength)
9300-1 TM29 Comparative weldability : 50,000 to 150,000 psi yield strength steels : Controlled thermal severity (CTS) test

ELECTRODES -- L-100 -- CHEMICAL ANALYSIS
9300-1 TM16 Properties : I-N 100 (135,000 psi yield strength)

ELECTRODES -- L-103 OXWELD
9300-1 TM12 "Narrow-Gap" welds : HY-80

ELECTRODES -- LL1
9300-1 TM1 HY-80 : Submerged arc weldment : A309 flux : LL1 wire : Explosion bulge

ELECTRODES -- LLR1

9300-1 TM22 Properties : 130 to 150,000 psi : Steel weldments : Filler wire (LLR1)

9300-1 TM29 Comparative weldability : 50,000 to 150,000 psi yield strength steels : Controlled thermal severity (CTS) test

ELECTRODES -- LLR1 -- CHEMICAL ANALYSIS

9300-1 TM22 Properties : 130 to 150,000 psi : Steel weldments : Filler wire (LLR1)

ELECTRODES -- LINDE 103

9300-1 TM5 Semi-automatic : MIG : HY-80 : Linde 103 filler wire

ELECTRODES -- M188

9300-1 TM29 Comparative weldability : 50,000 to 150,000 psi yield strength steels : Controlled thermal severity (CTS) test

9300-1 TM35 NASL circular fillet weldability (NCFW) test

ELECTRODES -- MIL-110-18

9300-1 TM2 Embrittled 110-18 weld metal : Fatigue life : HY-80 : Butt weldments

9300-1 TM4 Explosion bulge properties : 110-18 : STS : HY-100

9300-1 TM7 Fatigue : Explosion bulge properties : HY-80 : Butt weldments

9300-1 TM9 Explosion crack starter : CVA-66 : STS

9300-1 TM10 Properties : 110-18 : STS : HY-100

9300-1 TM12 "Narrow-Gap" welds : HY-80

9300-1 TM19 Fatigue : HY-80 : Cast tees butt welded to rolled section single and double weld joint design

9300-1 TM26 Welding : Fatigue properties : HY-100 steel tee-fillet welded plates

9300-1 TM29 Comparative weldability : 50,000 to 150,000 psi yield strength steels : Controlled thermal severity (CTS) test

9300-1 TM34 Mechanical peening : Fatigue properties : HY-80 butt welds

9300-1 TM35 NASL circular fillet weldability (NCFW) test

9300-1 TM38 Peening : Properties : HY-80/MIL-110-18 weldments

9300-1 TM39 Crack growth properties : HY-80, HY-100 and HY-130/150 : Sea water environment

9300-1 TM49 Weldability : HY-130/150 steel covered electrodes

9300-1 PR3 Welding electrodes : HY-100

9300-23 TM5 Overstrain : Residual stresses : Fatigue

9300-39 PR1 Welding repair procedure : Class 1, nickel-molybdenum steel shafting

FSP-41 FR "As-welded" hardness : Heat affected zone : Hardenable steels

6160-1 PR1 Weldability : Fatigue properties : HY-80

6160-2 PR3 Welding : Fatigue properties : HY-80

6160-7 FR "Blast Seel" : Wheelabrator Corp. : Pre-weld primer : HY-80

6285-1 PR1 HY-80 and HY-100 : Weldability

6285-1 PR2 HY-80 plate : Weld fabrication variables : Mechanical properties

6285-4 FR Weldability : Cast HY-80

ELECTRODES -- MIL-110-18 (continued)
6285-8 FR STS plate : Grade 110-18 electrodes : Explosion bulge properties
6285-12 PR1 STS weldments : Explosion bulge tests
6285-12 FR Notch-toughness properties : STS weldments : Explosion crack-starter tests
6285-25 FR HY-100 : Rolled plate : Armco-Sheffield steel

ELECTRODES -- MIL-120-18
6285-12 PR1 STS weldments : Explosion bulge tests
6285-12 FR Notch-toughness properties : STS weldments : Explosion crack-starter tests
6285-25 FR HY-100 : Rolled plate : Armco-Sheffield steel

ELECTRODES -- MIL-130-18
6285-25 FR HY-100 : Rolled plate : Armco-Sheffield steel

ELECTRODES -- MIL-260
6285-6 PR1 STS plating : Grade 260 electrodes : Explosion evaluation
6285-6 PR2 Notch-toughness properties : MIL-260 welds : STS plate
6285-9 FR Notch-toughness properties : Welds : CVA-63 (Kitty Hawk)

ELECTRODES -- MIL-310
6285-12 FR Notch-toughness properties : STS weldments : Explosion crack-starter tests

ELECTRODES -- MIL-8018
9300-1 TM29 Comparative weldability : 50,000 to 150,000 psi yield strength steels : Controlled thermal severity (CTS) test

ELECTRODES -- MIL-9018
6285-1 PR2 HY-80 plate : Weld fabrication variables : Mechanical properties

ELECTRODES -- OXWELD 103
6285-20 FR HY-80 submerged arc : Flux (Unionmelt 103) : Electrode (Oxweld 103) : Linde Co. : Explosion bulge tests

ELECTRODES -- 7½%Ni-4Co
9300-1 TM30 HY-180/210 : HP 9-4-25 : 7½Ni-4Co-Cr, Mo weld deposits

ELECTRODES -- 7½%Ni-4Co -- CHEMICAL ANALYSIS
9300-1 TM30 HY-180/210 : HP 9-4-25 : 7½Ni-4Co-Cr, Mo weld deposits

ELECTRODES --7½%Ni-4Co -- MECHANICAL PROPERTIES
9300-1 TM30 HY-180/210 : HP 9-4-25 : 7½Ni-4Co-Cr, Mo weld deposits

ELECTRODES -- 7½%Ni-4Co-Cr, Mo
9300-1 TM30 HY-180/210 : HP 9-4-25 : 7½Ni-4Co-Cr, Mo weld deposits
9300-1 TM36 HY-180/210 : Explosion bulge testing : 9Ni-4Co steel alloy weldments

ELECTRODES -- 12% NICKEL MARAGING
9300-1 TM21 12% nickel maraging steel-filler wire system
9300-1 TM50 12% nickel maraging steels : Filler wire system

ELECTRODES -- 12% NICKEL MARAGING -- CHEMICAL ANALYSIS
9300-1 TM21 12% nickel maraging steel-filler-wire system
9300-1 TM50 12% nickel maraging steels : Filler wire system

Electro-slag welding see WELDING PROCESSES -- ELECTRO-SLAG

EMBRITTLEMENT
9300-1 TM2 Embrittled : 110-18 : Fatigue life : HY-80 : Butt weldments
6160-1 PR2 Weld flaws : Fatigue properties : HY-80 : Butt and fillet weld

Environmental stress corrosion see STRESS CORROSION

ENVIRONMENTAL STRESS CORROSION SCREENING TEST see also TEAR TEST
9300-1 TM32 High-strength alloys : Environmental stress cracking
9300-1 TM44 Screening high-strength steels : Environmental stress cracking

Environmental stress cracking test see TEAR TEST

Explosion bulge tests see EXPLOSION CRACK STARTER, BULGE

EXPLOSION CRACK STARTER, BULGE
9300-1 TM1 HY-80 : Submerged arc weldment : A309 flux : LL1 wire : Explosion bulge
9300-1 TM3 Short arc MIG : Vertical position welding : HY-80
9300-1 TM4 Explosion bulge properties : 110-18 : STS : HY-100
9300-1 TM5 Semi-automatic : MIG : HY-80 : Linde 103 filler wire
9300-1 TM7 Fatigue : Explosion bulge properties : HY-80 : Butt weldments
9300-1 TM9 Explosion crack-starter : CVA-66 : STS
9300-1 TM10 Properties : 110-18 : STS : HY-100
9300-1 TM12 "Narrow-Gap" welds : HY-80
9300-1 TM13 HP-150 steel-filler wire system
9300-1 TM22 Properties : 130 to 150,000 psi : Steel weldments : Filler wire (LLR1)
9300-1 TM23 Welding : HY-100
9300-1 TM34 Mechanical peening : Fatigue properties : HY-80 butt welds
9300-1 TM38 Peening : Properties : HY-80/MIL-110-18 weldments
9300-1 TM42 MIG welding : HY-130/150
9300-1 TM45 Pulsed arc process : Welding : HY-80 : HY-130/150 (5% Ni)
9300-1 TM48 HY-180/210 : Explosion bulge testing : 9Ni-4Co type steel weldment
9300-1 TM52 Covered electrode : Metallic arc welding : HY-130/150
9300-1 PR3 Welding electrodes : HY-100
6285-1 PR2 HY-80 plate : Weld fabrication variables : Mechanical properties
6285-3 FR Mechanical properties : Iron alloys : Explosion bulge tests : Heat treatable electrodes
6285-4 FR Weldability : Cast HY-80 .
6285-5 FR Explosion bulge properties : HY-80 : Electro-slag welding process

EXPLOSION CRACK STARTER, BULGE (continued)

6285-5S FR Explosion bulge performance : Mechanical properties : HY-80 weldments : Electro-slag process
6285-6 PR1 STS plating : Grade 260 electrode : Explosion evaluation
6285-6 PR2 Notch-toughness properties : MIL-260 welds : STS plate
6285-7 FR Explosion bulge performance : HY-80 weldments : Submerged arc process
6285-8 FR STS plate : Grade 110-18 electrodes : Explosion bulge properties
6285-10 FR Explosion bulge performance : HY-80 weldments : Vertical position : MIG process
6285-11 FR Forged HY-80 : Isaacson Iron Works : Explosion bulge testing
6285-12 PR1 STS weldments : Explosion bulge tests
6285-12 FR Notch-toughness properties : STS weldments : Explosion crack-starter tests
6285-13 FR Cast HY-80 : American Brake Shoe Co.
6285-14 FR Cast HY-80 : Birdsboro Corp. : Explosion bulge testing
6285-14A FR Cast HY-80 steel plate : Birdsboro Corp.
6285-15 FR British steel QT-35 weldments : Explosion bulge testing
6285-16 FR HY-150 steel plate : Explosion bulge (crack-starter)
6285-17 FR HY-80 submerged arc weldments : Experimental flux L-732 : Experimental filler wire 14N : Battelle Memorial Institute
6285-18 PR1 Forgings of HY-80 : Midvale-Heppenstall Co.
6285-19 FR HY-80 castings : Bonney-Floyd Co. : Explosion bulge tests
6285-20 FR HY-80 submerged-arc : Flux (Unionmelt 103) : Electrode (Oxweld 103) : Linde Co. : Explosion bulge tests
6285-21 FR Hot rolled (HY-80) : Bethlehem Steel Co. : Explosion bulge tests
6285-22 FR Forgings : HY-80 : Ladish Co. : Explosion bulge testing
6285-23 PR1 HY-80 extrusions : Curtiss-Wright Metal Processing Div. : Forged billet : Crucible Steel of Canada, Ltd.
6285-23 PR2 Extrusions, HY-80 : Atlas Welland Co. : Cast billet : Curtiss-Wright Corp. Metals Processing Division : Explosion bulge tests
6285-23 FR Extrusions, HY-80 : Curtiss-Wright Corp., Metals Processing Division : Isaacson Iron Works : Forged billet : Explosion bulge tests
6285-24 Rolled HY-80 : Sheffield Division, Armco Steel Corp.
6285-25 FR HY-100 : Rolled plate : Armco-Sheffield steel
6285-26 FR Cast HY-80 steel plates : Lebanon Steel Foundry
6285-27 FR HY-80 steel extrusions : Curtiss-Wright Corp., Metals Processing Division : American Steel Foundries : Cast billet
6285-28 FR Cast HY-80 steel plates : Standard Steel Works

Extruded tee-sections see TEE-SECTIONS -- EXTRUDED

FIE TEMPERATURE

6285-6 PR1 STS plating : Grade 260 electrode : Explosion evaluation
6285-6 PR2 Notch-toughness properties : MIL-260 welds : STS plate
6285-8 FR STS plate : Grade 110-18 electrodes : Explosion bulge properties
6285-12 FR Notched-toughness properties : STS weldments : Explosion crack-starter tests
6285-16 HY-150 steel plate : Explosion bulge (crack-starter)

FATIGUE

9300-1 TM2 Embrittled 110-18 weld metal : Fatigue life : HY-80 : Butt weldments
9300-1 TM7 Fatigue : Explosion bulge properties : HY-80 : Butt weldments
9300-1 TM18 Grinding : Shot peening : Fatigue life : Tee weldments
9300-1 TM19 Fatigue : HY-80 : Cast tees butt welded to rolled section single and double weld joint design
9300-1 TM26 Welding : Fatigue properties : HY-100 steel tee-fillet welded plates
9300-1 TM31 Effect of welding : Fatigue properties : HY-100 steel tee-fillet welded plates mechanically peened
9300-1 TM34 Mechanical peening : Fatigue properties : HY-80 butt welds
9300-1 TM38 Peening : Properties : HY-80/MIL-110-18 weldments
9300-1 TM40 Fatigue life : HY-130/150
9300-1 TM43 Fatigue life : HY-130/150
9300-1 TM51 Corrosion fatigue : Stress corrosion properties : HY-130/150
9300-1 PR1 Peening : Improvement : Fatigue properties : HY-80
9300-23 TM2 Residual stresses : Tee-fillet welds : HY-80
9300-23 TM5 Overstrain : Residual stresses : Fatigue
9300-39 PR1 Welding repair procedure : Class 1, nickel-molybdenum steel shafting
6160-1 PR1 Weldability : Fatigue properties : HY-80
6160-1 PR2 Weld flaws : Fatigue properties : HY-80 : Butt and fillet welds
6160-2 PR1 Welding : Fatigue properties : HY-80
6160-2 PR2 Welding : Fatigue properties : HY-80
6160-2 PR3 Welding : Fatigue properties : HY-80
6160-2 PR4 Welding : Fatigue properties : HY-80 : Virgin plate
6160-2 PR5 Welding : Fatigue properties : British QT-35 : Tee-fillet welded plate
6160-2 PR7 Fatigue : Iron base alloys : HY-80 : Cast tee
6160-2 Fatigue : Iron base alloys : HY-80 : Rolled plate to cast plate butt welds : Peened tee-fillet : Ground tee-fillet welds

Fatigue pre-crack machine, Manlabs <u>see</u> MANLABS FATIGUE PRE-CRACK MACHINE, MODEL FCM-300B

FATIGUE TESTS -- DYNAMIC BEAM

6160-1 PR1 Weldability : Fatigue properties : HY-80
6160-2 PR1 Welding : Fatigue properties : HY-80

FATIGUE TESTS -- HYDROSTATIC OR PNEUMATIC PLATE

9300-1 TM18 Grinding : Shot peening : Fatigue life : Tee weldments
9300-1 TM19 Fatigue : HY-80 Cast tees butt welded to rolled section single and double weld joint design
9300-1 TM26 Welding : Fatigue properties : HY-100 steel tee-fillet welded plates
9300-1 TM31 Effect of welding : Fatigue properties : HY-100 steel tee-fillet welded plates mechanically peened
9300-1 TM34 Mechanical peening : Fatigue properties : HY-80 butt welds

FATIGUE TESTS -- HYDROSTATIC OR PNEUMATIC PLATE (continued)
9300-1 TM39 Crack growth properties : HY-80, HY-100 and HY-130/150 : Sea water environment
9300-1 TM40 Fatigue life : HY-130/150
9300-1 TM51 Corrosion fatigue : Stress corrosion properties : HY-130/150
9300-1 PR1 Peening : Improvement : Fatigue properties : HY-80
9300-23 TM5 Overstrain : Residual stresses : Fatigue
6160-1 PR1 Weldability : Fatigue properties : HY-80
6160-2 PR1 Welding : Fatigue properties : HY-80
6160-2 PR3 Welding : Fatigue properties : HY-80
6160-2 PR5 Welding : Fatigue properties : British QT-35 tee-fillet welded plate

FILLER METAL see also ELECTRODES; WELD DEPOSITS
9300-1 TM23 Welding : HY-100
9300-1 TM41 MIG and TIG welding : HY-130/150 : As welded : Stress relieved
9300-1 TM42 MIG welding : HY-130/150
9300-1 TM47 Stress relief : Toughness : HY-130/150 base plate and weld metal
9300-1 TM49 Weldability : HY-130/150 steel covered electrodes
9300-1 PR3 Welding electrodes : HY-100
9300-1 PR4 Weldability: HY-130/150 steel and MIG filler wires

FILLER METAL -- CHEMICAL ANALYSIS
9300-1 TM13 HP-150 steel-filler wire system
9300-1 TM25 Short arc MIG : Out-of-position welding : HY-80
9300-1 TM41 MIG and TIG welding : HY-130/150 : As welded : Stress relieved
9300-1 TM42 MIG welding : HY-130/150
9300-1 TM45 Pulsed arc process : Welding : HY-80 : HY-130/150 (5% Ni)
9300-1 TM48 HY-180/210 : Explosion bulge testing : 9Ni-4Co type steel weldment
6285-5S FR Explosion bulge performance : Mechanical properties : HY-80 weldments : Electro-slag process

FILLER METAL -- MECHANICAL PROPERTIES
9300-1 TM25 Short arc MIG : Out-of-position welding : HY-80
9300-1 TM29 Comparative weldability : 50,000 to 150,000 psi yield strength steels · Controlled thermal severity (CTS) test
9300-1 TM45 Pulsed arc process : Welding : HY-80 : HY-130/150 (5% Ni)
6285-7 FR Explosion bulge performance : HY-80 weldments : Submerged arc process

Filler wire see ELECTRODES; FILLER METAL

FILLET WELDS see also TEE-FILLET WELDS
9300-1 TM25 Short arc MIG : Out-of-position welding : HY-80
9300-1 TM29 Comparative weldability : 50,000 to 150,000 psi yield strength steels : Controlled thermal severity (CTS) test
9300-1 TM35 NASL circular fillet weldability (NCFW) test
9300-1 TM37 Forming : Cold-formed HY-100 extruded steel tee-bars
9300-1 TM45 Pulsed arc process : Welding : HY-80 : HY-130/150 (5% Ni)

FILLET WELDS (continued)
9300-1 TM52 Covered electrode : Metallic arc welding : HY-130/150
6160-7 FR "Blast Seel" : Wheelabrator Corp. : Pre-weld primer : HY-80

FLAME CUTTING
9300-1 TM14 Effects of forming : Cold-formed HY-80 rolled-steel tee-bars
9300-1 TM27 Effects of forming : Cold-formed HY-100 rolled-steel tee-bars

Flash butt welding see WELDING PROCESSES -- FLASH BUTT

Flat position welding see WELDING POSITION -- FLAT

FLUX
9300-1 TM1 HY-80 : Submerged arc weldment : A309 flux : LL1 wire : Explosion bulge
6285-7 FR Explosion bulge performance : HY-80 weldments : Submerged arc process
6285-17 FR HY-80 submerged arc weldment : Experimental flux L-732 : Experimental filler wire 14N : Battelle Memorial Institute
6285-20 FR HY-80 submerged arc : Flux (Unionmelt 103) : Electrode (Oxweld 103) : Linde Co. : Explosion bulge tests

Forgings see STEELS -- HY-80, FORGED

Forming see COLD FORMING

Fusion incomplete in welds see WELDS -- FUSION INCOMPLETE

Gas metal arc welding see WELDING PROCESSES -- MIG (METAL-INERT-GAS)

Gas -- Shielding see SHIELDING GAS

GRINDING
9300-1 TM18 Grinding : Shot peening : Fatigue life : Tee weldments
9300-1 TM21 12% nickel maraging steel-filler wire system
9300-1 TM34 Mechanical peening : Fatigue properties : HY-80 butt welds
9300-1 TM42 MIG welding : HY-130/150
9300-1 TM52 Covered electrode : Metallic arc welding : HY-130/150
9300-23 TM2 Residual stresses : Tee-fillet welds : HY-80
9300-23 TM5 Overstrain : Residual stresses : Fatigue
6160-2 Fatigue : Iron base alloys : HY-80 : Rolled plate to cast plate butt welds : Peened tee-fillet : Ground tee-fillet welds

GROOVE WELDS
6285-3 FR Mechanical properties : Iron alloys : Explosion bulge tests : Heat treatable electrodes

H-SECTIONS
9300-1 TM14 Effects of forming : Cold-formed HY-80 rolled-steel tee-bars
9300-1 TM27 Effects of forming : Cold-formed HY-100 rolled-steel tee-bars

HAZ see HEAT AFFECTED ZONE (HAZ)

HP 9-4-25 see STEELS -- HY-180/210, WROUGHT

HP-150 see STEELS -- HP-150, WROUGHT

HTS see STEELS -- HTS, WROUGHT

HY-80 see STEELS -- HY-80

HY-100 see STEELS -- HY-100

HY-130/150 see STEELS -- HY-130/150

HY-150 see STEELS -- HY-130/150

Hadfield steels see STEELS -- HADFIELD, NICKEL MODIFIED

HARDNESS
9300-1 TM16 Properties : I-N 100 (135,000 psi yield strength)
9300-1 TM38 Peening : Properties : HY-80/MIL-110-18 weldments
9300-1 TM41 MIG and TIG welding : HY-130/150 : As welded : Stress relieved
9300-1 TM49 Weldability : HY-130/150 steel covered electrodes
9300-1 PR1 Welding repair procedure : Class 1, nickel-molybdenum steel shafting
9300-39 PR2 Weldability : Nickel modified Hadfield steel chain links
FSP-41 FR "As-welded" hardness : Heat affected zone : Hardenable steels
6160-1 PR1 Weldability : Fatigue properties : HY-80
6285-1 PR1 HY-80 and HY-100 : Weldability
6285-3 FR Mechanical properties : Iron alloys : Explosion bulge tests : Heat treatable electrodes
6285-4 FR Weldability : Cast HY-80

HARDNESS TESTS -- KNOOP
6285-4 FR Weldability : Cast HY-80

HARDNESS TESTS -- ROCKWELL
6285-5 FR Explosion bulge properties : HY-80 : Electro-slag welding process
6285-5S FR Explosion bulge performance : Mechanical properties : HY-80 weldments : Electro-slag process

HARDNESS TESTS -- VICKERS
9300-1 TM3 Short arc MIG : Vertical position welding : HY-80
6285-3 FR Mechanical properties : Iron alloys : Explosion bulge tests : Heat treatable electrodes
6285-4 FR Weldability : Cast HY-80

HEAT AFFECTED ZONE (HAZ)

9300-1 TM8 Weldability : I-N 100 (135,000 psi yield strength)
9300-1 TM9 Explosion crack starter : CVA66 : STS
9300-1 TM10 Properties : 110-18 : STS : HY-100
9300-1 TM16 Properties : I-N 100 (135,000 psi yield strength)
9300-1 TM29 Comparative weldability : 50,000 to 150,000 psi yield strength steels : Controlled thermal severity (CTS) test
9300-1 TM35 NASL circular fillet weldability (NCFW) test
9300-1 TM42 MIG welding : HY-130/150
9300-1 TM49 Weldability : HY-130/150 steel covered electrodes
9300-1 PR4 Weldability : HY-130/150 steel and MIG filler wires
9300-39 PR1 Welding repair procedure : Class 1, nickel-molybdenum steel shafting
9300-39 PR2 Weldability : Nickel modified Hadfield steel chain links
FSP-[illegible] FR "As-welded" hardness : Heat affected zones : Hardenable steels
6160-1 PR1 Weldability : Fatigue properties : HY-80
6285-1 PR1 HY-80 and HY-100 : Weldability
6285-3 FR Mechanical properties : Iron alloys : Explosion bulge tests : Heat treatable electrodes
6285-4 FR Weldability : Cast HY-80
6285-5 FR Explosion bulge properties : HY-80 : Electro-slag welding process
6285-5S FR Explosion bulge performance : Mechanical properties : HY-80 weldments : Electro-slag process
6285-6 PR2 Notch-toughness properties : MIL-260 welds : STS plate
6285-11 FR Forged HY-80 : Isaacson Iron Works : Explosion bulge testing
6285-12 FR Notch-toughness properties : STS weldments : Explosion crack-starter tests
6285-14 FR Cast HY-80 : Birdsboro Corp. : Explosion bulge testing
6285-14A FR Cast HY-80 steel plates : Birdsboro Corp.
6285-17 FR HY-80 submerged arc weldments : Experimental flux L-732 : Experimental filler wire 14N : Battelle Memorial Institute
6285-20 FR HY-80 submerged-arc : Flux (Unionmelt 103) : Electrode (Oxweld 103) : Linde Co. : Explosion bulge tests
6285-25 FR HY-100 : Rolled plate : Armco-Sheffield steel

Heat treatable electrodes see ELECTRODES -- HEAT TREATABLE

Heat treatment, Post-weld see POST-WELD HEAT TREATMENT

Hole drilling for measuring residual stresses see STRESSES, RESIDUAL -- MEASUREMENT -- HOLE DRILLING METHOD

Horizontal position welding see WELDING POSITION -- HORIZONTAL

Hydrostatic plate fatigue tests see FATIGUE TESTS -- HYDROSTATIC OR PNEUMATIC PLATE

I-N 100 see STEELS -- I-N 100, WROUGHT

Impact testing machine see RIEHLE IMPACT TESTING MACHINE

Impact tests see CHARPY V NOTCH

KEYHOLE SLOTTED PLATE RESTRAINT
9300-1 TM49 Weldability : HY-130/150 steel covered electrodes
9300-1 PR4 Weldability: HY-130/150 steel and MIG filler wires
Knoop hardness tests see HARDNESS TESTS -- KNOOP

L-100 see ELECTRODES -- L-100

L-103 Oxweld see ELECTRODES -- L-103 OXWELD

LL1 see ELECTRODES -- LL1

LLR1 see ELECTRODES -- LLR1

Lan-Cer-Amp see RARE EARTH ADDITION (LAN-CER-AMP)

Linde 103 see ELECTRODES -- LINDE 103

Linde A405 see SHIELDING GAS -- A405 (LINDE)

Links, Chain see CHAIN LINKS

LOW-MU PERMEABILITY INDICATOR
9300-39 PR2 Weldability : Nickel modified Hadfield steel chain links

M188 see ELECTRODES-- M188

MIG welding see WELDING PROCESSES -- MIG (METAL-INERT-GAS)

MIG short arc welding see WELDING PROCESSES -- MIG SHORT ARC

MIL-110-18 see ELECTRODES -- MIL-110-18

MIL-120-18 see ELECTRODES -- MIL-120-18

MIL-130-18 see ELECTRODES -- MIL-130-18

MIL-260 see ELECTRODES -- MIL-260

MIL-310 see ELECTRODES -- MIL-310

MIL-8018 see ELECTRODES -- MIL-8018

MIL-9018 see ELECTRODES -- MIL-9018

Magnetic particle welding inspection see WELDING INSPECTION -- MAGNETIC PARTICLE

MANLABS FATIGUE PRE-CRACK MACHINE, MODEL FCM-300B
9300-1 TM44 Screening high strength steels : Environmental stress cracking

MANLABS SLOW BEND MACHINE, MODEL SB-750
9300-1 TM44 Screening high strength steels : Environmental stress cracking

Maraging steels see STEELS -- 12% NICKEL MARAGING, WROUGHT; ELECTRODES -- 12% NICKEL MARAGING

Mechanical properties see BEND TESTS; CHARPY V NOTCH; TENSILE PROPERTIES; also subdivision MECHANICAL PROPERTIES under types of ELECTRODES and STEELS and under FILLER METAL, TEE-SECTIONS, TITANIUM ALLOYS and WELD DEPOSITS

MELTING PROCESSES -- ELECTRIC FURNACE
9300-1 TM20 HY-130/150

MELTING PROCESSES -- VACUUM ARC
9300-1 TM13 HP150 steel-filler wire system
9300-1 TM20 HY-130/150

Metal-inert-gas welding see WELDING PROCESSES -- MIG (METAL-INERT-GAS)

Metallic arc welding see WELDING PROCESSES -- METALLIC ARC

Metallographic welding inspection see WELDING INSPECTION -- METALLOGRAPHIC

Micro-hardness see HARDNESS

Microscopic welding inspection see WELDING INSPECTION -- METALLOGRAPHIC

Microstructure welding inspection see WELDING INSPECTION -- METALLOGRAPHIC

NASL circular fillet weldability test see CIRCULAR FILLET WELDABILITY (NCFW) TEST

NCFW test see CIRCULAR FILLET WELDABILITY (NCFW) TEST

NDT see DROP WEIGHT (NDT)

"NARROW-GAP" WELDS
9300-1 TM12 "Narrow-Gap" welds : HY-80

Navy tear test see TEAR TEST

Nil-ductility transition temperature see DROP WEIGHT (NDT)

NITRIDING
9300-1 TM8 Weldability : I-N 100 (135,000 psi yield strength)
9300-1 TM16 Properties : I-N 100 (135,000 psi yield strength)

Oil inspection of welding see WELDING INSPECTION -- OIL PENETRATION

Optical autocollimation method see AUTOCOLLIMATION METHOD FOR MEASURING ANGULAR DISTORTION

OSCILLOGRAPHS
9300-1 TM45 Pulsed arc process : Welding : HY-80 : HY-130/150 (5% Ni)

Overhead position welding see WELDING POSITION -- OVERHEAD

OVERSTRAIN
9300-23 TM5 Overstrain : Residual stresses and fatigue

Oxweld 103 see ELECTRODES -- OXWELD 103

Oxweld L-103 see ELECTRODES -- L-103 OXWELD

PEENING see also SHOT PEENING
9300-1 TM18 Grinding : Shot peening : Fatigue life : Tee weldments
9300-1 TM24 Mechanical peening : Nil-ductility transition temperature : HY-80 : MIL-110-18 weld deposit
9300-1 TM34 Mechanical peening : Fatigue properties : HY-80 butt welds
9300-1 TM38 Peening : Properties : HY-80/MIL-110-18 weldments
9300-1 TM39 Crack growth properties : HY-80, HY-100 and HY-130/150 : Sea water environment
9300-1 PR1 Peening : Improvement : Fatigue properties : HY-80
9300-23 TM2 Residual stresses : Tee-fillet welds : HY-80
9300-23 TM5 Overstrain : Residual stresses and fatigue
6160-2 Fatigue : Iron base alloys : HY-80 : Rolled plate to cast plate butt welds : Peened tee-fillet : Ground tee-fillet welds

Permeability indicator see LOW-MU PERMEABILITY INDICATOR
PICKLING
9300-1 PR2 Pickling and Surface Pitting:HY-80/100
Plate fatigue machines see FATIGUE TESTS -- HYDROSTATIC OR PNEUMATIC PLATE

Pneumatic plate fatigue tests see FATIGUE TESTS -- HYDROSTATIC OR PNEUMATIC PLATE
POLISHING
9300-23 TM5 Overstrain : Residual stresses and fatigue

POST-WELD HEAT TREATMENT
FSP-41 FR "As-welded" hardness : Heat affected zone : Hardenable steels
6285-3 FR Mechanical properties : Iron alloys : Explosion bulge tests : Heat treatable electrodes
6285-5 FR Explosion bulge properties : HY-80 : Electro-slag welding process
6285-5S FR Explosion bulge performance : Mechanical properties : HY-80 weldments : Electro-slag process

PRIMERS (COATINGS)
6160-7 FR "Blast-Seel" : Wheelabrator Corp. : Pre-weld primer : HY-80

Pulsed arc welding see WELDING PROCESSES -- PULSED ARC

QT-35 see STEELS -- QT-35 (BRITISH), WROUGHT

QUENCHING
6285-16 FR HY-150 steel plate : Explosion bulge (crack-starter)

Radiographic welding inspection see WELDING INSPECTION -- RADIOGRAPHIC

RARE EARTH ADDITION (LAN-CER-AMP)
6285-1 PR1 HY-80 and HY-100 : Weldability

RARE EARTH ADDITION (LAN-CER-AMP) -- CHEMICAL ANALYSIS
6285-1 PR1 HY-80 and HY-100 : Weldability

Repaired welds see WELDS -- REPAIR

Residual stresses see STRESSES, RESIDUAL

Restraint cracking see CRACKING -- RESTRAINT

RIEHLE IMPACT TESTING MACHINE
9300-1 TM17 Cold-forming properties : HY-80 steel tee-section extrusions

Rockwell hardness tests see HARDNESS TESTS -- ROCKWELL

Roll formed steel see STEELS -- HY-80, ROLLED; STEELS -- HY-100, ROLLED

Rolled tee-sections see TEE-SECTIONS -- ROLLED

STS see STEELS -- STS, WROUGHT

SANDING
9300-23 TM5 Overstrain : Residual stresses and fatigue

Sea water corrosion see CORROSION (SEA WATER)

Semiautomatic welding see WELDING -- SEMIAUTOMATIC

SHAFTS -- WELDING
9300-39 PR1 Welding repair procedure : Class 1, nickel-molybdenum steel shafting

SHIELDING GAS -- A405 (LINDE)
9300-1 TM13 HP-150 steel-filler wire system
9300-1 TM29 Comparative weldability : 50,000 to 150,000 psi yield strength steels : Controlled thermal severity (CTS) test
9300-1 TM35 NASL circular fillet weldability (NCFW) test

SHIELDING GAS -- ARGON
9300-1 TM50 12% nickel maraging steels : Filler wire system

SHIELDING GAS -- ARGON + 0.1% OXYGEN
9300-1 TM50 12% nickel maraging steels : Filler wire system

SHIELDING GAS -- ARGON + 1% OXYGEN
9300-1 TM13 HP-150 steel-filler wire system
9300-1 TM21 12% nickel maraging steel-filler wire system
9300-1 TM29 Comparative weldability : 50,000 to 150,000 psi yield strength steels : Controlled thermal severity (CTS) test
9300-1 TM39 Crack growth properties : HY-80, HY-100 and HY-130/150 : Sea water environment

Short arc MIG welding see WELDING PROCESSES -- MIG SHORT ARC

SHOT PEENING see also PEENING
9300-1 TM18 Grinding : Shot peening : Fatigue life : Tee weldments
9300-23 TM2 Residual stresses : Tee-fillet welds : HY-80
9300-23 TM5 Overstrain : Residual stresses and fatigue
9300-39 PR1 Welding repair procedure : Class 1, nickel-molybdenum steel shafting

Side bend tests see BEND TESTS

STEELS -- CLASS 1, NI-MO (MIL-S-23284)
9300-39 PR1 Welding repair procedure : Class 1, nickel-molybdenum steel shafting

STEELS -- CLASS 1, NI-MO (MIL-S-23284) -- CHEMICAL ANALYSIS
9300-39 PR1 Welding repair procedure : Class 1, nickel-molybdenum steel shafting

STEELS -- CLASS 1, NI-MO (MIL-S-23284) -- MECHANICAL PROPERTIES
9300-39 PR1 Welding repair procedure : Class 1, nickel-molybdenum steel shafting

STEELS -- CLASS AN AND HG (MIL-S-890)
9300-39 PR1 Welding repair procedure : Class 1, nickel-molybdenum steel shafting

STEELS -- CLASS AN AND HG (MIL-S-890) -- CHEMICAL ANALYSIS
9300-39 PR1 Welding repair procedure : Class 1, nickel-molybdenum steel shafting

STEELS -- CLASS AN AND HG (MIL-S-890) -- MECHANICAL PROPERTIES
9300-39 PR1 Welding repair procedure : Class 1, nickel-molybdenum steel shafting

Steels -- HP 9-4-25 see STEELS -- HY-180/210, WROUGHT

STEELS -- HP-150, WROUGHT
9300-1 TM13 HP150 steel-filler wire system
9300-1 TM22 Properties : 130 to 150,000 psi : Steel weldments : Filler wire (LLR1)
9300-1 TM29 Comparative weldability : 50,000 to 150,000 psi yield strength steels : Controlled thermal severity (CTS) test

STEELS -- HP-150, WROUGHT -- CHEMICAL ANALYSIS
9300-1 TM13 HP150 steel-filler wire system
9300-1 TM20 HY-130/150
9300-1 TM22 Properties : 130 to 150,000 psi : Steel weldments : Filler wire (LLR1)
9300-1 TM29 Comparative weldability : 50,000 to 150,000 psi yield strength steels : Controlled thermal severity (CTS) test

STEELS -- HP-150, WROUGHT -- MECHANICAL PROPERTIES
9300-1 TM13 HP150 steel-filler wire system
9300-1 TM29 Comparative weldability : 50,000 to 150,000 psi yield strength steels : Controlled thermal severity (CTS) test

STEELS -- HTS, WROUGHT

9300-1 TM29 Comparative weldability : 50,000 to 150,000 psi yield strength steels : Controlled thermal severity (CTS) test

STEELS -- HTS, WROUGHT -- CHEMICAL ANALYSIS

9300-1 TM29 Comparative weldability : 50,000 to 150,000 psi yield strength steels : Controlled thermal severity (CTS) test

STEELS -- HTS, WROUGHT -- MECHANICAL PROPERTIES

9300-1 TM29 Comparative weldability : 50,000 to 150,000 psi yield strength steels : Controlled thermal severity (CTS) test

STEELS -- HY-80, CAST

6160-2 PR7 Fatigue : Iron base alloys : HY-80 : Cast tee
6160-2 Fatigue : Iron base alloys : HY-80 : Rolled plate to cast plate butt welds : Peened tee-fillet : Ground tee-fillet welds
6285-4 FR Weldability : Cast HY-80
6285-13 FR Cast HY-80 : American Brake Shoe Co.
6285-14 FR Cast HY-80 : Birdsboro Corp. : Explosion bulge testing
6285-14A FR Cast HY-80 steel plates : Birdsboro Corp.
6285-19 FR HY-80 castings : Bonney-Floyd Co. : Explosion bulge tests
6285-19A FR Cast HY-80 steel plates : Bonney-Floyd Co.
6285-23 PR2 Extrusions, HY-80 : Atlas Welland Co. : Cast billet : Curtiss-Wright Corp. Metals Processing Division : Explosion bulge tests
6285-26 FR Cast HY-80 steel plates : Lebanon Steel Foundry
6285-27 FR HY-80 steel extrusions : Curtiss-Wright Corp., Metals Processing Division : American Steel Foundries : Cast billet
6285-28 FR Cast HY-80 steel plates : Standard Steel Works

STEELS -- HY-80, CAST -- CHEMICAL ANALYSIS

9300-1 TM19 Fatigue : HY-80 : Cast tees butt welded to rolled section single and double weld joint design
6160-2 PR7 Fatigue : Iron base alloys : HY-80 : Cast tee
6285-4 FR Weldability : Cast HY-80
6285-13 FR Cast HY-80 : American Brake Shoe Co.
6285-14 FR Cast HY-80 : Birdsboro Corp. : Explosion bulge testing
6285-14A FR Cast HY-80 steel plates : Birdsboro Corp.
6285-19A FR Cast HY-80 steel plates : Bonney-Floyd Co.
6285-26 FR Cast HY-80 steel plates : Lebanon Steel Foundry
6285-27 FR HY-80 steel extrusions : Curtiss-Wright Corp., Metals Processing Division : American Steel Foundries : Cast billet
6285-28 FR Cast HY-80 steel plates : Standard Steel Works

STEELS -- HY-80, CAST -- MECHANICAL PROPERTIES

9300-1 TM19 Fatigue : HY-80 : Cast tees butt welded to rolled section single and double weld joint design
6160-2 PR7 Fatigue : Iron base alloys : HY-80 : Cast tee
6285-4 FR Weldability : Cast HY-80
6285-13 FR Cast HY-80 : American Brake Shoe Co.
6285-14 FR Cast HY-80 : Birdsboro Corp. : Explosion bulge testing
6285-14A FR Cast HY-80 steel plates : Birdsboro Corp.
6285-19A Cast HY-80 steel plates : Bonney-Floyd Co.

STEELS -- HY-80, CAST -- MECHANICAL PROPERTIES (continued)

6285-23 PR2 Extrusions, HY-80 : Atlas Welland Co. : Cast billet : Curtiss-Wright Corp. Metals Processing Division : Explosion bulge tests

6285-26 FR Cast HY-80 steel plates : Lebanon Steel Foundry

6285-27 FR HY-80 steel extrusions : Curtiss-Wright Corp., Metals Processing Division : American Steel Foundries : Cast billet

6285-28 FR Cast HY-80 steel plates : Standard Steel Works

STEELS -- HY-80, FORGED

6285-11 FR Forged HY-80 : Isaacson Iron Works : Explosion bulge testing

6285-18 PR1 Forgings of HY-80 : Midvale-Heppenstall Co.

6285-22 FR Forgings, HY-80 : Ladish Co. : Explosion bulge testing

6285-23 PR1 HY-80 extrusions : Curtiss-Wright Metal Processing Div. : Forged billet : Crucible Steel of Canada, Ltd.

6285-23 FR Extrusions, HY-80 : Curtiss-Wright Corp., Metals Processing Division : Isaacson Iron Works : Forged billet : Explosion bulge tests

STEELS -- HY-80, FORGED -- CHEMICAL ANALYSIS

6285-11 FR Forged HY-80 : Isaacson Iron Works : Explosion bulge testing

6285-23 FR Extrusions, HY-80 : Curtiss-Wright Corp., Metals Processing Division : Isaacson Iron Works : Forged billet : Explosion bulge tests

STEELS -- HY-80, FORGED -- MECHANICAL PROPERTIES

6285-11 FR Forged HY-80 : Isaacson Iron Works : Explosion bulge testing

6285-22 FR Forgings, HY-80 : Ladish Co. : Explosion bulge testing

6285-23 PR1 HY-80 extrusions : Curtiss-Wright Metal Processing Div. : Forged billet : Crucible Steel of Canada, Ltd.

6285-23 FR Extrusions, HY-80 : Curtiss-Wright Corp., Metals Processing Division : Isaacson Iron Works : Forged billet : Explosion bulge tests

STEELS -- HY-80, ROLLED

9300-1 TM14 Effects of forming : Cold-formed HY-80 rolled-steel tee-bars

9300-1 TM27 Effects of forming : Cold-formed HY-100 rolled-steel tee-bars

6160-2 Fatigue : Iron base alloys : HY-80 : Rolled plate to cast plate butt welds : Peened tee-fillet : Ground tee-fillet welds

6285-11 FR Forged HY-80 : Isaacson Iron Works : Explosion bulge testing

6285-13 FR Cast HY-80 : American Brake Shoe Co.

6285-14A FR Cast HY-80 steel plates : Birdsboro Corp.

6285-18 PR1 Forgings of HY-80 : Midvale-Heppenstall Co.

6285-21 FR Hot rolled (HY-80) : Bethlehem Steel Co. : Explosion bulge tests

6285-22 FR Forgings, HY-80 : Ladish Co. : Explosion bulge testing

6285-24 Rolled HY-80 : Sheffield Division, Armco Steel Corp.

STEELS -- HY-80, ROLLED -- CHEMICAL ANALYSIS

9300-1 TM19 Fatigue : HY-80 : Cast tees butt welded to rolled section single and double weld joint design

6285-24 Rolled HY-80 : Sheffield Division, Armco Steel Corp.

STEELS -- HY-80, ROLLED -- MECHANICAL PROPERTIES

6160-2 Fatigue : Iron base alloys : HY-80 : Rolled plate to cast plate butt welds : Peened tee-fillet : Ground tee-fillet welds

6285-21 FR Hot rolled (HY-80) : Bethlehem Steel Co. : Explosion bulge tests

6285-24 Rolled HY-80 : Sheffield Division, Armco Steel Corp.

STEELS -- HY-80, WROUGHT

9300-1 TM1 HY-80 : Submerged arc weldment : A309 flux : LL1 wire : Explosion bulge

9300-1 TM2 Embrittled 110-18 weld metal : Fatigue life : HY-80 : Butt weldments

9300-1 TM3 Short arc MIG : Vertical position welding : HY-80

9300-1 TM5 Semi-automatic : MIG : HY-80 : Linde 103 filler wire

9300-1 TM6 Residual stresses : Extruded : Cold-formed : HY-80 : Tee-bars

9300-1 TM7 Fatigue : Explosion bulge properties : HY-80 : Butt weldments

9300-1 TM12 "Narrow-Gap" welds : HY-80

9300-1 TM17 Cold-forming properties : HY-80 steel tee section extrusions

9300-1 TM18 Grinding : Shot peening : Fatigue life : Tee weldments

9300-1 TM24 Mechancial peening : Nil-ductility transition temperature : HY-80 : MIL-110-18 weld deposit

9300-1 TM25 Short arc MIG : Out-of-position welding : HY-80

9300-1 TM26 Welding : Fatigue properties : HY-100 steel tee-fillet welded plates

9300-1 TM29 Comparative weldability : 50,000 to 150,000 psi yield strength steels : Controlled thermal severity (CTS) test

9300-1 TM31 Effect of welding : Fatigue properties : HY-100 steel tee-fillet welded plates mechanically peened

9300-1 TM34 Mechanical peening : Fatigue properties : HY-80 butt welds

9300-1 TM35 NASL circular fillet weldability (NCFW) test

9300-1 TM37 Forming : Cold-formed HY-100 extruded steel tee-bars

9300-1 TM38 Peening : Properties : HY-80/MIL-110-18 weldments

9300-1 TM39 Crack growth properties : HY-80, HY-100 and HY-130/150 : Sea water environment

9300-1 TM43 Fatigue life : HY-130/150

9300-1 TM45 Pulsed arc process : Welding : HY-80 : HY-130/150 (5% Ni)

9300-1 TM49 Weldability : HY-130/150 steel covered electrodes

9300-1 PR1 Peening : Improvement : Fatigue properties : HY-80

9300-1 PR3 Welding electrodes : HY-100

9300-1 PR4 Weldability : HY-130/150 steel and MIG filler wires

9300-23 TM2 Residual stresses : Tee-fillet welds : HY-80

9300-23 TM5 Overstrain : Residual stresses and fatigue

FSP-41 FR "As-welded" hardness : Heat affected zone : Hardenable steels

6160-1 PR1 Weldability : Fatigue properties : HY-80

6160-1 PR2 Weld flaws : Fatigue properties : HY-80 : Butt and fillet weld

STEELS -- HY-80, WROUGHT (continued)

6160-2 PR1 Welding : Fatigue properties : HY-80
6160-2 PR2 Welding : Fatigue properties : HY-80
6160-2 PR3 Welding : Fatigue properties : HY-80
6160-2 PR4 Welding : Fatigue properties : HY-80 : Virgin plate
6160-2 PR5 Welding : Fatigue properties : British QT-35 : Tee-fillet welded plate
6160-2 Fatigue : Iron base alloys : HY-80 : Rolled plate to cast plate butt welds : Peened tee-fillet : Ground tee-fillet welds
6160-6 PR1 Residual stresses : Extruded : Cold-formed HY-80 : Tee-bars
6160-7 FR "Blast-Seel" : Wheelabrator Corp. : Pre-weld primer : HY-80
6285-1 PR1 HY-80 and HY-100 : Weldability
6285-1 PR2 HY-80 plate : Weld fabrication variables : Mechanical properties
6285-3 FR Mechanical properties : Iron alloys : Explosion bulge tests : Heat treatable electrodes
6285-4 FR Weldability : Cast HY-80
6285-5 FR Explosion bulge properties : HY-80 : Electro-slag welding process
6285-5S FR Explosion bulge performance : Mechanical properties : HY-80 weldments : Electro-slag process
6285-7 FR Explosion bulge performance : HY-80 weldments : Submerged arc process
6285-10 FR Explosion bulge performance : HY-80 weldments : Vertical position : MIG process
6285-14 FR Cast HY-80 : Birdsboro Corp. : Explosion bulge testing
6285-17 FR HY-80 submerged arc weldments : Experimental flux L-732 : Experimental filler wire 14N : Battelle Memorial Institute
6285-20 FR HY-80 submerged-arc : Flux (Unionmelt 103) : Electrode Oxweld 103 : Linde Co. : Explosion bulge tests

STEELS -- HY-80, WROUGHT -- CHEMICAL ANALYSIS

9300-1 TM1 HY-80 : Submerged arc weldment : A309 flux : LL1 wire : Explosion bulge
9300-1 TM7 Fatigue : Explosion bulge properties : HY-80 : Butt weldments
9300-1 TM18 Grinding : Shot peening : Fatigue life : Tee weldments
9300-1 TM24 Mechanical peening : Nil-ductility transition temperature : HY-80 : MIL-110-18 weld deposit
9300-1 TM25 Short arc MIG : Out-of-position welding : HY-80
9300-1 TM29 Comparative weldability : 50,000 to 150,000 psi yield strength steels : Controlled thermal severity (CTS) test
9300-1 TM34 Mechanical peening : Fatigue properties : HY-80 butt welds
9300-1 TM45 Pulsed arc process : Welding : HY-80 : HY-130/150 (5% Ni)
9300-1 TM49 Weldability : HY-130/150 steel covered electrodes
9300-1 PR1 Peening : Improvement : Fatigue properties : HY-80
6160-2 PR1 Welding : Fatigue properties : HY-80
6160-2 PR3 Welding : Fatigue properties : HY-80
6160-2 PR4 Welding : Fatigue properties : HY-80 : Virgin plate
6160-2 PR5 Welding : Fatigue properties : British QT-35 : Tee-fillet welded plate
6160-2 PR6 Fatigue : Iron base alloys : Tee-fillet welds : HY-80 : Compression

STEELS -- HY-80, WROUGHT -- CHEMICAL ANALYSIS (continued)

6285-1 PR1 HY-80 and HY-100 : Weldability
6285-3 FR Mechanical properties : Iron alloys : Explosion bulge tests : Heat treatable electrodes
6285-4 FR Weldability : Cast HY-80
6285-5S FR Explosion bulge performance : Mechanical properties : HY-80 weldments : Electro-slag process

STEELS -- HY-80, WROUGHT -- MECHANICAL PROPERTIES

9300-1 TM1 HY-80 : Submerged arc weldment : A309 flux : LL1 wire : Explosion bulge
9300-1 TM3 Short arc MIG : Vertical position welding : HY-80
9300-1 TM7 Fatigue : Explosion bulge properties : HY-80 : Butt weldments
9300-1 TM18 Grinding : Shot peening : Fatigue life : Tee weldments
9300-1 TM24 Mechanical peening : Nil-ductility transition temperature : HY-80 : MIL-110-18 weld deposit
9300-1 TM25 Short arc MIG : Out-of-position welding : HY-80
9300-1 TM29 Comparative weldability : 50,000 to 150,000 psi yield strength steels : Controlled thermal severity (CTS) test
9300-1 TM34 Mechanical peening : Fatigue properties : HY-80 butt welds
9300-1 TM35 NASL circular fillet weldability (NCFW) test
9300-1 TM45 Pulsed arc process : Welding : HY-80 : HY-130/150 (5% Ni)
9300-1 TM49 Weldability : HY-130/150 steel covered electrodes
9300-1 PR1 Peening : Improvement : Fatigue properties : HY-80
6160-1 PR1 Weldability : Fatigue properties : HY-80
6160-2 PR1 Welding : Fatigue properties : HY-80
6160-2 PR3 Welding : Fatigue properties : HY-80
6160-2 PR4 Welding : Fatigue properties : HY-80 : Virgin plate
6160-2 PR5 Welding : Fatigue properties : British QT-35 : Tee-fillet welded plate
6160-2 PR6 Fatigue : Iron base alloys : Tee-fillet welds : HY-80 : Compression
6285-1 PR1 HY-80 and HY-100 : Weldability
6285-3 FR Mechanical properties : Iron alloys : Explosion bulge tests : Heat treatable electrodes
6285-4 FR Weldability : Cast HY-80
6285-5 FR Explosion bulge properties : HY-80 : Electro-slag welding process
6285-5S FR Explosion bulge performance : Mechanical properties : HY-80 weldments : Electro-slag process
6285-7 FR Explosion bulge performance : HY-80 weldments : Submerged arc process

STEELS -- HY-80 (HIGH CARBON), WROUGHT

9300-1 TM29 Comparative weldability : 50,000 to 150,000 psi yield strength steels : Controlled thermal severity (CTS) test

STEELS -- HY-80 (HIGH CARBON), WROUGHT -- CHEMICAL ANALYSIS

9300-1 TM29 Comparative weldability : 50,000 to 150,000 psi yield strength steels : Controlled thermal severity (CTS) test

STEELS -- HY-80 (HIGH CARBON), WROUGHT -- MECHANICAL PROPERTIES

9300-1 TM29 Comparative weldability : 50,000 to 150,000 psi yield strength steels : Controlled thermal severity (CTS) test

STEELS -- HY-100, ROLLED
9300-1 TM27 Effects of forming : Cold-formed HY-100 rolled-steel tee-bars
9300-1 TM33 Stress relieving : Toughness (Charpy V) : Mechanical properties : HY-100 steel tee-beams hot rolled, extruded and cold-formed
6285-25 FR HY-100 : Rolled plate : Armco-Sheffield steel

STEELS -- HY-100, ROLLED -- CHEMICAL ANALYSIS
6285-25 FR HY-100 : Rolled plate : Armco-Sheffield steel

STEELS -- HY-100, ROLLED -- MECHANICAL PROPERTIES
9300-1 TM33 Stress relieving : Toughness (Charpy V) : Mechanical properties : HY-100 steel tee-beams hot rolled, extruded and cold-formed
6285-25 FR HY-100 : Rolled plate : Armco-Sheffield steel

STEELS -- HY-100, WROUGHT
9300-1 TM4 Explosion bulge properties : 110-18 : STS : HY-100
9300-1 TM10 Properties : 110-18 : STS : HY-100
9300-1 TM23 Welding : HY-100
9300-1 TM26 Welding : Fatigue properties : HY-100 steel tee-fillet welded plates
9300-1 TM29 Comparative weldability : 50,000 to 150,000 psi yield strength steels : Controlled thermal severity (CTS) test
9300-1 TM37 Forming : Cold-formed HY-100 extruded steel tee-bars
9300-1 TM39 Crack growth properties : HY-80, HY-100 and HY-130/150 : Sea water environment
9300-1 PR3 Welding electrodes : HY-100
6285-1 PR1 HY-80 and HY-100 : Weldability

STEELS -- HY-100, WROUGHT -- CHEMICAL ANALYSIS
9300-1 TM10 Properties : 110-18 : STS : HY-100
9300-1 TM23 Welding : HY-100
9300-1 TM26 Welding : Fatigue properties : HY-100 steel tee-fillet welded plates
9300-1 TM29 Comparative weldability : 50,000 to 150,000 psi yield strength steels : Controlled thermal severity (CTS) test
9300-1 PR3 Welding electrodes : HY-100
6285-1 PR1 HY-80 and HY-100 : Weldability

STEELS -- HY-100, WROUGHT -- MECHANICAL PROPERTIES
9300-1 TM10 Properties : 110-18 : STS : HY-100
9300-1 TM23 Welding : HY-100
9300-1 TM26 Welding : Fatigue properties : HY-100 steel tee-fillet welded plates
9300-1 TM29 Comparative weldability : 50,000 to 150,000 psi yield strength steels : Controlled thermal severity (CTS) test
6285-1 PR HY-80 and HY-100 : Weldability

STEELS -- HY-100, WROUGHT -- WELDMENT CRITERIA
9300-1 PR3 Welding electrodes : HY-100

STEELS -- HY-100 (RARE EARTH ADDITION), WROUGHT
6285-1 PR1 HY-80 and HY-100 : Weldability

STEELS -- HY-100 (RARE EARTH ADDITION), WROUGHT -- CHEMICAL ANALYSIS
6285-1 PR1 HY-80 and HY-100 : Weldability

STEELS -- HY-100 (RARE EARTH ADDITION), WROUGHT -- MECHANICAL PROPERTIES
6285-1 PR1 HY-80 and HY-100 : Weldability

STEELS -- HY-130/150, WROUGHT
9300-1 TM16 Properties : I-N 100 (135,000 psi yield strength)
9300-1 TM22 Properties : 130 to 150,000 psi : Steel weldments : Filler wire (LLR1)
9300-1 TM29 Comparative weldability : 50,000 to 150,000 psi yield strength steels : Controlled thermal severity (CTS) test
9300-1 TM32 High-strength alloys : Environmental stress cracking
9300-1 TM35 NASL circular fillet weldability (NCFW) test
9300-1 TM39 Crack growth properties : HY-80, HY-100 and HY-130/150 : Sea water environment
9300-1 TM40 Fatigue life : HY-130/150
9300-1 TM41 MIG and TIG welding : HY-130/150 : As welded : Stress relieved
9300-1 TM42 MIG welding : HY-130/150
9300-1 TM43 Fatigue life : HY-130/150
9300-1 TM44 Screening high-strength steels : Environmental stress cracking
9300-1 TM45 Pulsed arc process : Welding : HY-80 : HY-130/150 (5% Ni)
9300-1 TM46 Optical autocollimation method : Stress-relief treatments : High-strength steel weldments
9300-1 TM47 Stress relief : Toughness : HY-130/150 base plate and weld metal
9300-1 TM49 Weldability : HY-130/150 steel covered electrodes
9300-1 TM51 Corrosion fatigue : Stress corrosion properties:: HY-130/150
9300-1 TM52 Covered electrode : Metallic arc welding : HY-130/150
9300-1 PR4 Weldability : HY-130/150 steel and MIG filler wires
6285-16 FR HY-150 steel plate : Explosion bulge (crack-starter)

STEELS -- HY-130/150, WROUGHT -- CHEMICAL ANALYSIS
9300-1 TM20 HY-130/150
9300-1 TM22 Properties : 130-150,000 psi : Steel weldments : Filler wire (LLR1)
9300-1 TM29 Comparative weldability : 50,000 to 150,000 psi yield strength steels : Controlled thermal severity (CTS) test
9300-1 TM32 High-strength alloys : Environmental stress cracking
9300-1 TM41 MIG and TIG welding : HY-130/150 : As welded : Stress relieved
9300-1 TM42 MIG welding : HY-130/150
9300-1 TM44 Screening high-strength steels : Environmental stress cracking
9300-1 TM45 Pulsed arc process : Welding : HY-80 : HY-130/150 (5% Ni)
9300-1 TM49 Weldability : HY-130/150 steel covered electrodes
9300-1 TM51 Corrosion fatigue : Stress corrosion properties : HY-130/150
9300-1 TM52 Covered electrode : Metallic arc welding : HY-130/150

STEELS -- HY-130/150, WROUGHT -- MECHANICAL PROPERTIES
9300-1 TM29 Comparative weldability : 50,000 to 150,000 psi yield strength steels : Controlled thermal severity (CTS) test
9300-1 TM32 High-strength alloys : Environmental stress cracking

STEELS -- HY-130/150, WROUGHT -- MECHANICAL PROPERTIES (continued)
9300-1 TM35 NASL circular fillet weldability (NCFW) test
9300-1 TM40 Fatigue life : HY-130/150
9300-1 TM41 MIG and TIG welding : HY-130/150 steels : As welded : Stress relieved
9300-1 TM42 MIG welding : HY-130/150
9300-1 TM44 Screening high-strength steels : Environmental stress cracking
9300-1 TM45 Pulsed arc process : Welding : HY-80 : HY-130/150 (5% Ni)
9300-1 TM49 Weldability : HY-130/150 steel covered electrodes
9300-1 TM51 Corrosion fatigue : Stress corrosion properties : HY-130/150
9300-1 TM52 Covered electrode : Metallic arc welding : HY-130/150
9300-1 PR4 Weldability : HY-130/150 steel and MIG filler wires
6285-16 FR HY-150 steel plate : Explosion bulge (crack-starter)

Steels -- HY-150 see STEELS -- HY-130/150, WROUGHT

STEELS -- HY-180/210, WROUGHT
9300-1 TM28 HY-180/210 : HP 9-4-25 weld deposit
9300-1 TM30 HY-180/210 : HP 9-4-25 : 7-1/2Ni-4Co-Cr, Mo weld deposits
9300-1 TM36 HY-180/210 : Explosion bulge testing : 9Ni-4Co steel alloy weldments
9300-1 TM48 HY-180/210 : Explosion bulge testing : 9Ni-4Co type steel weldment

STEELS -- HY-180/210, WROUGHT -- CHEMICAL ANALYSIS
9300-1 TM30 HY-180/210 : HP 9-4-25 : 7-1/2Ni-4Co-Cr, Mo weld deposits
9300-1 TM36 HY-180/210 : Explosion bulge testing : 9Ni-4Co steel alloy weldments
9300-1 TM48 HY-180/210 : Explosion bulge testing : 9Ni-4Co type steel weldment

STEELS -- HY-180/210, WROUGHT - MECHANICAL PROPERTIES
9300-1 TM28 HY-180/210 : HP 9-4-25 weld deposit
9300-1 TM30 HY-180/210 : HP 9-4-25 : 7-1/2Ni-4Co-Cr, Mo weld deposits
9300-1 TM36 HY-180/210 : Explosion bulge testing : 9Ni-4Co steel alloy weldments
9300-1 TM48 HY-180/210 : Explosion bulge testing : 9Ni-4Co type steel weldment

STEELS -- HADFIELD, NICKEL MODIFIED
9300-39 PR2 Weldability : Nickel modified Hadfield steel chain links

STEELS -- HADFIELD, NICKEL MODIFIED -- CHEMICAL ANALYSIS
9300-39 PR2 Weldability : Nickel modified Hadfield steel chain links

STEELS -- HADFIELD, NICKEL MODIFIED -- MECHANICAL PROPERTIES
9300-39 PR2 Weldability : Nickel modified Hadfield steel chain links

STEELS -- I-N 100, WROUGHT
9300-1 TM8 Weldability : I-N 100 (135,000 psi yield strength)
9300-1 TM16 Properties : I-N 100 (135,000 psi yield strength)
9300-1 TM29 Comparative weldability : 50,000 to 150,000 psi yield strength steels : Controlled thermal severity (CTS) test

STEELS -- I-N 100, WROUGHT -- CHEMICAL ANALYSIS
9300-1 TM8 Weldability : I-N 100 (135,000 psi yield strength)
9300-1 TM16 Properties : I-N 100 (135,000 psi yield strength)
9300-1 TM29 Comparative weldability : 50,000 to 150,000 psi yield strength steels : Controlled thermal severity (CTS) test

STEELS -- I-N 100, WROUGHT -- MECHANICAL PROPERTIES
9300-1 TM8 Weldability : I-N 100 (135,000 psi yield strength)
9300-1 TM16 Properties : I-N 100 (135,000 psi yield strength)
9300-1 TM29 Comparative weldability : 50,000 to 150,000 psi yield strength steels : Controlled thermal severity (CTS) test

Steels -- Nitrided see NITRIDING ; Pickling see PICKLING

STEELS -- QT-35 (BRITISH), WROUGHT
6160-2 PR5 Welding : Fatigue properties : British QT-35 : Tee-fillet welded plate
6285-15 FR British steel QT-35 weldments : Explosion bulge testing

STEELS -- QT-35 (BRITISH), WROUGHT -- CHEMICAL ANALYSIS
6160-2 PR5 Welding : Fatigue properties : British QT-35 : Tee-fillet welded plate
6285-15 FR British steel QT-35 weldments : Explosion bulge testing

STEELS -- QT-35 (BRITISH), WROUGHT -- MECHANICAL PROPERTIES
6160-2 PR5 Welding : Fatigue properties : British QT-35 : Tee-fillet welded plate

STEELS -- STS, WROUGHT
9300-1 TM4 Explosion bulge properties : 110-18 : STS : HY-100
9300-1 TM9 Explosion crack-starter : CVA-66 : STS
9300-1 TM10 Properties : 110-18 : STS : HY-100
9300-1 TM29 Comparative weldability : 50,000 to 150,000 psi yield strength steels : Controlled thermal severity (CTS) test
9300-1 TM35 NASL circular fillet weldability test
9300-1 TM49 Weldability : HY-130/150 steel covered electrodes
9300-1 PR3 Welding electrodes : HY-100
6285-6 PR1 STS plating : Grade 260 electrode : Explosion evaluation
6285-6 PR2 Notch-toughness properties : MIL-260 welds : STS plate
6285-8 FR STS plate : Grade 110-18 electrodes : Explosion bulge properties
6285-9 FR Notch-toughness properties : Welds : CVA-63 (Kitty Hawk)
6285-12 PR1 STS weldments : Explosion bulge tests
6285-12 FR Notch-toughness properties : STS weldments : Explosion crack-starter tests
6285-16 FR HY-150 steel plate : Explosion bulge (crack-starter)

STEELS -- STS, WROUGHT -- CHEMICAL ANALYSIS
9300-1 TM10 Properties : 110-18 : STS [illegible]Y-100
9300-1 TM29 Comparative weldability [illegible]0 to 150,000 psi yield strength steels : Controlled thermal severity (CTS) test
9300-1 TM49 Weldability : HY-130/150 steel covered electrodes
9300-1 PR3 Welding electrodes : HY-100
6285-12 FR Notch-toughness properties : STS weldments : Explosion crack-starter test

STEELS -- STS, WROUGHT -- MECHANICAL PROPERTIES
9300-1 TM10 Properties : 110-18 : STS : HY-100
9300-1 TM29 Comparative weldability : 50,000 to 150,000 psi yield strength steels : Controlled thermal severity (CTS) test
9300-1 TM35 NASL circular fillet weldability (NCFW) test
9300-1 TM49 Weldability : HY-130/150 steel covered electrodes
9300-1 PR4 Weldability : HY-130/150 steel and MIG filler wires

Steels -- WEL-TEN 100 N see STEELS -- I-N 100, WROUGHT

Steels -- 5% nickel see STEELS -- HY-130/150, WROUGHT

Steels -- 9Ni-4Co see STEELS -- HY-180/210, WROUGHT

STEELS -- 12% NICKEL MARAGING, WROUGHT
9300-1 TM21 12% nickel maraging steel-filler wire system
9300-1 TM44 Screening high-strength steels : Environmental stress cracking
9300-1 TM50 12% nickel maraging steels : Filler wire system

STEELS -- 12% NICKEL MARAGING, WROUGHT -- CHEMICAL ANALYSIS
9300-1 TM21 12% nickel maraging steel-filler wire system
9300-1 TM44 Screening high-strength steels : Environmental stress cracking
9300-1 TM50 12% nickel maraging steels : Filler wire system

STEELS -- 12% NICKEL MARAGING, WROUGHT -- MECHANICAL PROPERTIES
9300-1 TM21 12% nickel maraging steel-filler wire system
9300-1 TM44 Screening high-strength steels : Environmental stress cracking
9300-1 TM50 12% nickel maraging steels : Filler wire system

STRAIN GAGES
9300-1 TM14 Effects of forming : Cold-formed HY-80 rolled-steel tee-bars
9300-1 TM18 Grinding : Shot peening : Fatigue life : Tee weldments
9300-1 TM19 Fatigue : HY-80 : Cast tees butt welded to rolled section single and double weld joint design
9300-1 TM27 Effects of forming : Cold-formed HY-100 rolled-steel tee-bars
9300-1 TM37 Forming : Cold-formed HY-100 extruded steel tee-bars
9300-1 TM39 Crack growth properties : HY-80, HY-100 and HY-130/150 : Sea water environment
9300-23 TM2 Residual stresses : Tee-fillet welds : HY-80
9300-23 TM5 Overstrain : Residual stresses and fatigue
9300-39 PR2 Weldability : Nickel modified Hadfield steel chain links
6160-2 PR1 Welding : Fatigue properties : HY-80
6160-2 PR3 Welding : Fatigue properties : HY-80
6160-2 PR6 Fatigue : Iron base alloys : Tee-fillet welds : HY-80 : Compression
6160-6 PR1 Residual stresses : Extruded : Cold-formed HY-80 : Tee-bars
6285-4 FR Weldability : Cast HY-80

Strain indicators see BALDWIN, MODEL 120, STRAIN INDICATOR; BALDWIN, TYPE N, STRAIN INDICATOR

STRESS CORROSION
9300-1 TM32 High-strength alloys : Environmental stress cracking
9300-1 TM39 Crack growth properties : HY-80, HY-100 and HY-130/150 : Sea water environment
9300-1 TM44 Screening high-strength steels : Environmental stress cracking
9300-1 TM51 Corrosion fatigue : Stress corrosion properties : HY-130/150
9300-39 PR2 Weldability : Nickel modified Hadfield steel chain links

Stress corrosion screening test see ENVIRONMENTAL STRESS CORROSION SCREENING TEST

Stress cracking test, Environmental see TEAR TEST

STRESS RELIEVING
9300-1 TM14 Effects of forming : Cold-formed HY-80 rolled-steel tee-bars
9300-1 TM17 Cold-forming properties : HY-80 steel tee-section extrusions
9300-1 TM27 Effects of forming : Cold-formed HY-100 rolled-steel tee-bars
9300-1 TM33 Stress relieving : Toughness (Charpy V) : Mechanical properties : HY-100 steel tee-beams hot rolled, extruded and cold-formed
9300-1 TM37 Forming : Cold-formed HY-100 extruded steel tee-bars
9300-1 TM41 MIG and TIG welding : HY-130/150 : As welded : Stress relieved
9300-1 TM46 Optical autocollimation method : Stress-relief treatments : High-strength steel weldments
9300-1 TM47 Stress relief : Toughness : HY-130/150 base plate and weld metal
9300-39 PR1 Welding repair procedure : Class 1, nickel-molybdenum steel shafting
6285-17 FR HY-80 submerged arc weldments : Experimental flux L-732 : Experimental filler wire 14N : Battelle Memorial Institute

STRESSES, RESIDUAL
9300-1 TM6 Residual stresses : Extruded : Cold-formed : HY-80 : Tee-bars
9300-1 TM14 Effects of forming : Cold-formed HY-80 rolled-steel tee-bars
9300-1 TM17 Cold-forming properties : HY-80 steel tee-section extrusions
9300-1 TM27 Effects of forming : Cold-formed HY-100 rolled-steel tee-bars
9300-1 TM37 Forming : Cold-formed HY-100 extruded steel tee-bars
9300-1 TM39 Crack growth properties : HY-80, HY-100 and HY-130/150 : Sea water environment
9300-1 TM46 Optical autocollimation method : Stress-relief treatments : High-strength steel weldments
9300-1 PR1 Peening : Improvement : Fatigue properties : HY-80
9300-23 TM2 Residual stresses : Tee-fillet welds : HY-80
9300-23 TM5 Overstrain : Residual stresses and fatigue
6160-2 PR6 Fatigue : Iron base alloys : Tee-fillet welds : HY-80 : Compression
6160-6 PR1 Residual stresses : Extruded : Cold-formed HY-80 : Tee-bars

STRESSES, RESIDUAL -- MEASUREMENT -- HOLE DRILLING METHOD
9300-1 TM39 Crack growth properties : HY-80, HY-100 and HY-130/150 : Sea water environment
9300-23 TM2 Residual stresses : Tee-fillet welds : HY-80
9300-23 TM5 Overstrain : Residual stresses and fatigue

Submerged arc welding see WELDING PROCESSES -- SUBMERGED ARC

TIG welding see WELDING PROCESSES -- TIG (TUNGSTEN-INERT-GAS)

TEAR TEST see also ENVIRONMENTAL STRESS CORROSION SCREENING TEST
9300-1 TM32 High-strength alloys : Environmental stress cracking

Tee-bars see TEE-SECTIONS

Tee-beams see TEE-SECTIONS

TEE-FILLET WELDS see also FILLET WELDS
9300-1 TM18 Grinding : Shot peening : Fatigue life : Tee weldments
9300-1 TM26 Welding : Fatigue properties : HY-100 steel tee-fillet welded plates
9300-1 TM34 Mechanical peening : Fatigue properties : HY-80 butt welds
9300-1 TM38 Peening : Properties : HY-80/MIL-110-18 weldments
9300-1 TM39 Crack growth properties : HY-80, HY-100 and HY-130/150 : Sea water environment
9300-1 TM46 Optical autocollimation method : Stress-relief treatments : High-strength steel weldments
9300-1 PR1 Peening : Improvement : Fatigue properties : HY-80
9300-23 TM2 Residual stresses : Tee-fillet welds : HY-80
9300-23 TM5 Overstrain : Residual stresses and fatigue
6160-1 PR1 Weldability : Fatigue properties : HY-80
6160-1 PR2 Weld flaws : Fatigue properties : HY-80 : Butt and fillet weld
6160-2 PR1 Welding : Fatigue properties : HY-80
6160-2 PR3 Welding : Fatigue properties : HY-80
6160-2 PR4 Welding : Fatigue properties : HY-80 : Virgin plate
6160-2 PR5 Welding : Fatigue properties : British QT-35 : Tee-fillet welded plate
6160-2 PR6 Fatigue : Iron base alloys : Tee-fillet welds : HY-80 : Compression
6160-2 Fatigue : Iron base alloys : HY-80 : Rolled plate to cast plate butt welds : Peened tee-fillet : Ground tee-fillet welds

TEE-SECTIONS -- CAST
9300-1 TM19 Fatigue : HY-80 : Cast tees butt welded to rolled section single and double weld joint design
6160-2 PR7 Fatigue : Iron base alloys : HY-80 : Cast tee

TEE-SECTIONS -- EXTRUDED
9300-1 TM6 Residual stresses : Extruded : Cold-formed : HY-80 : Tee-bars
9300-1 TM14 Effects of forming : Cold-formed HY-80 rolled-steel tee-bars
9300-1 TM17 Cold-forming properties : HY-80 steel tee-section extrusions

TEE-SECTIONS -- EXTRUDED (continued)

9300-1 TM33 Stress relieving : Toughness (Charpy V) : Mechanical properties : HY-100 steel tee-beams hot rolled, extruded and cold-formed

9300-1 TM37 Forming : Cold-formed HY-100 extruded steel tee-bars

6160-6 PR1 Residual stresses : Extruded : Cold-formed HY-80 : Tee-bars

6285-23 PR1 HY-80 extrusions : Curtiss-Wright Metal Processing Div. : Forged billet : Crucible Steel of Canada, Ltd.

6285-23 PR2 Extrusions, HY-80 : Atlas Welland Co. : Cast billet : Curtiss-Wright Corp. Metals Processing Division : Explosion bulge tests

6285-23 FR Extrusions, HY-80 : Curtiss-Wright Corp., Metals Processing Division : Isaacson Iron Works : Forged billet : Explosion bulge tests

6285-27 FR HY-80 steel extrusions : Curtiss-Wright Corp., Metals Processing Division : American Steel Foundries : Cast billet

TEE-SECTIONS -- EXTRUDED -- CHEMICAL ANALYSIS

6285-23 FR Extrusions, HY-80 : Curtiss-Wright Corp., Metals Processing Division : Isaacson Iron Works : Forged billet : Explosion bulge tests

6285-27 FR HY-80 steel extrusions : Curtiss-Wright Corp., Metals Processing Division : American Steel Foundries : Cast billet

TEE-SECTIONS -- EXTRUDED -- MECHANICAL PROPERTIES

9300-1 TM17 Cold-forming properties : HY-80 steel tee-section extrusions

9300-1 TM33 Stress relieving : Toughness (Charpy V) : Mechanical properties : HY-100 steel tee-beams hot rolled, extruded and cold-formed

9300-1 TM37 Forming : Cold-formed HY-100 extruded steel tee-bars

6160-6 PR1 Residual stresses : Extruded : Cold-formed HY-80 : Tee-bars

6285-23 PR1 HY-80 extrusions : Curtiss-Wright Metal Processing Div. : Forged billet : Crucible Steel of Canada, Ltd.

6285-23 PR2 Extrusions, HY-80 : Atlas Welland Co. : Cast billet : Curtiss-Wright Corp. Metals Processing Division : Explosion bulge tests

6285-23 FR Extrusions, HY-80 : Curtiss-Wright Corp., Metals Processing Division : Isaacson Iron Works : Forged billet : Explosion bulge tests

6285-27 FR HY-80 steel extrusions : Curtiss-Wright Corp., Metals Processing Division : American Steel Foundries : Cast billet

TEE-SECTIONS -- ROLLED

9300-1 TM14 Effects of forming : Cold-formed HY-80 rolled-steel tee-bars

9300-1 TM27 Effects of forming : Cold-formed HY-100 rolled-steel tee-bars

9300-1 TM33 Stress relieving : Toughness (Charpy V) : Mechanical properties : HY-100 steel tee-beams hot rolled, extruded and cold-formed

6285-21 FR Hot rolled (HY-80) : Bethlehem Steel Co. : Explosion bulge tests

TEE-SECTIONS -- ROLLED -- MECHANICAL PROPERTIES

9300-1 TM33 Stress relieving : Toughness (Charpy V) : Mechanical properties : HY-100 steel tee-beams hot rolled, extruded and cold-formed

6285-21 FR Hot rolled (HY-80) : Bethlehem Steel Co. : Explosion bulge tests

TEE WELDS

9300-1 TM42 MIG welding : HY-130/150

6160-2 PR2 Welding : Fatigue properties : HY-80

6160-6 PR1 Residual stresses : Extruded : Cold-formed HY-80 : Tee-bars

TEMPERING

6285-16 FR HY-150 steel plate : Explosion bulge (crack-starter)

TENSILE PROPERTIES see also subdivision MECHANICAL PROPERTIES under types of ELECTRODES and STEELS

9300-1 TM3 Short arc M.I.G. : Vertical position welding : HY-80

9300-1 TM10 Properties : 110-18 : STS : HY-100

9300-1 TM13 HP-150 steel-filler wire system

9300-1 TM14 Effects of forming : Cold-formed HY-80 rolled-steel tee-bars

9300-1 TM16 Properties : I-N 100 (135,000 psi yield strength)

9300-1 TM17 Cold-forming properties : HY-80 steel tee-section extrusions

9300-1 TM21 12% nickel maraging steel-filler wire system

9300-1 TM22 Properties : 130 to 150,000 psi : Steel weldments : Filler wire (ILR1)

9300-1 TM23 Welding : HY-100

9300-1 TM25 Short arc MIG : Out-of-position welding : HY-80

9300-1 TM27 Effects of forming : Cold-formed HY-100 rolled-steel tee-bars

9300-1 TM28 HY 180/210 : HP 9-4-25 weld deposit

9300-1 TM30 HY-180/210 : HP 9-4-25 : 7-1/2Ni-4Co-Cr, Mo weld deposits

9300-1 TM33 Stress relieving : Toughness (Charpy V) : Mechanical properties : HY-100 steel tee-beams hot rolled, extruded and cold formed

9300-1 TM37 Forming : Cold-formed HY-100 extruded steel tee-bars

9300-1 TM41 MIG and TIG welding : HY-130/150 : As welded : Stress relieved

9300-1 TM42 MIG welding : HY-130/150

9300-1 TM45 Pulsed arc process : Welding : HY-80 : HY-130/150 (5% Ni)

9300-1 TM48 HY-180/210 : Explosion bulge testing : 9Ni-4Co type steel weldment

9300-1 TM50 12% nickel maraging steels : Filler wire system

9300-1 TM52 Covered electrode : Metallic arc welding : HY-130/150

9300-1 PR1 Peening : Improvement : Fatigue properties : HY-80

9300-1 PR3 Welding electrodes : HY-100

9300-23 TM2 Residual stresses : Tee-fillet welds : HY-80

9300-39 PR1 Welding repair procedure : Class 1, nickel-molybdenum steel shafting

9300-39 PR2 Weldability : Nickel modified Hadfield steel chain links

6160-1 PR1 Weldability : Fatigue properties : HY-80

6160-2 PR4 Welding : Fatigue properties : HY-80 : Virgin plate

TENSILE PROPERTIES (continued)

6160-2 PR6 Fatigue : Iron base alloys : Tee-fillet welds : HY-80 : Compression

6160-6 PR1 Residual stresses : Extruded : Cold-formed HY-80 : Tee-bars

6285-3 FR Mechanical properties : Iron alloys : Explosion bulge tests : Heat treatable electrodes

6285-4 FR Weldability : Cast HY-80

6285-5 FR Explosion bulge properties : HY-80 : Electro-slag welding process

6285-5S FR Explosion bulge performance : Mechanical properties : HY-80 weldments : Electro-slag process

6285-6 PR2 Notch-toughness properties : MIL-260 welds : S plate

6285-12 FR Notch-toughness properties : STS weldments : Explosion crack-starter tests

6285-14 FR Cast HY-80 : Birdsboro Corp. : Explosion bulge testing

6285-14A Cast HY-80 steel plates : Birdsboro Corp.

6285-15 FR British steel QT-35 weldments : Explosion bulge testing

6285-16 FR HY-150 steel plate : Explosion bulge (crack starter)

6285-19A FR Cast HY-80 steel plates : Bonney-Floyd Co

6285-20 FR HY-80 submerged-arc : Flux (Unionmelt 103) : Electrode (Oxweld 103) : Linde Co. : Explosion bulge tests

6285-22 FR Forgings, HY-80 : Ladish Co. : Explosion bulge testing

6285-23 PR1 HY-80 extrusions : Curtiss-Wright Metal Processing Div. : Forged billet : Crucible Steel of Canada, Ltd.

6285-23 PR2 Extrusions, HY-80 : Atlas Welland Co. : Cast billet : Curtiss-Wright Corp., Metals Processing Division : Explosion bulge tests

6285-23 FR Extrusions, HY-80 : Curtiss-Wright Corp., Metals Processing Division : Isaacson Iron Works : Forged billet : Explosion bulge tests

6285-24 Rolled HY-80 : Sheffield Division, Armco Steel Corp.

6285-25 FR HY-100 : Rolled steel : Armco-Sheffield steel

6285-26 FR Cast HY-80 steel plates : Lebanon Steel Foundry

6285-27 FR HY-80 steel extrusions : Curtiss-Wright Corp., Metals Processing Division : American Steel Foundries : Cast billet

6285-28 FR Cast HY 80 steel plates : Standard Steel Works

Thermal cracking <u>see</u> CRACKING -- THERMAL

Thermal treatment, Post-weld <u>see</u> POST-WELD HEAT TREATMENT

TITANIUM ALLOYS -- Ti-6Al-2.25Mo

9300-1 TM32 High-strength alloys : Environmental stress cracking

TITANIUM ALLOYS -- Ti-6Al-2.25Mo -- CHEMICAL ANALYSIS

9300-1 TM32 High-strength alloys : Environmental stress cracking

TITANIUM ALLOYS -- Ti-6Al-2.25Mo -- MECHANICAL PROPERTIES

9300-1 TM32 High-strength alloys : Environmental stress cracking

TITANIUM ALLOYS -- Ti-721

9300-1 TM32 High-strength alloys : Environmental stress cracking

TITANIUM ALLOYS -- Ti-721 -- CHEMICAL ANALYSIS

9300-1 TM32 High-strength alloys : Environmental stress cracking

TITANIUM ALLOYS -- Ti-721 -- MECHANICAL PROPERTIES
9300-1 TM32 High-strength alloys : Environmental stress cracking

TORSION
9300-39 PR1 Welding repair procedure : Class 1, nickel-molybdenum steel shafting

Toughness tests see CHARPY V NOTCH

TRITHERMAL WELDS
9300-1 TM29 Comparative weldability : 50,000 to 150,000 psi yield strength steels : Controlled thermal severity (CTS) test

Tungsten-inert-gas welding see WELDING PROCESSES -- TIG (TUNGSTEN-INERT-GAS)

Ultrasonic welding inspection see WELDING INSPECTION -- ULTRASONIC

Undercut welds see WELDS -- UNDERCUT

Vacuum arc melting see MELTING PROCESSES -- VACUUM ARC

Vertical position welding see WELDING POSITION -- VERTICAL

Vickers hardness tests see HARDNESS TESTS -- VICKERS

WEL-TEN 100 N see STEELS -- I-N 100, WROUGHT

WELD DEPOSITS see also ELECTRODES; FILLER METAL
9300-1 TM2 Embrittled 110-18 weld metal : Fatigue life : HY-80 : Butt weldments
9300-1 TM10 Properties : 110-18 : STS : HY-100
9300-1 TM28 HY 180/210 : HP 9-4-25 weld deposit
9300-1 TM29 Comparative weldability : 50,000 to 150,000 psi yield strength steels : Controlled thermal severity (CTS) test
9300-1 TM30 HY-180/210 : HP 9-4-25 : 7-1/2Ni-4Co-Cr, Mo weld deposits
9300-1 TM35 NASL circular fillet weldability (NCFW) test
9300-1 TM41 MIG and TIG welding : HY-130/150 : As welded : Stress relieved
9300-1 TM42 MIG welding : HY-130/150
9300-1 TM47 Stress relief : Toughness : HY-130/150 base plate and weld metal
9300-1 TM49 Weldability : HY-130/150 steel covered electrodes
9300-1 TM50 12% nickel maraging steels : Filler wire system
9300-1 TM52 Covered electrode : Metallic arc welding : HY-130/150
9300-39 PR2 Weldability : Nickel modified Hadfield steel chain links
6285-3 FR Mechanical properties : Iron alloys : Explosion bulge tests : Heat treatable electrodes
6285-6 PR2 Notch-toughness properties : MIL-260 welds : STS plate
6285-8 FR STS plate : Grade 110-18 electrodes : Explosion bulge properties
6285-9 FR Notch-toughness properties : Welds : CVA-63 (Kitty Hawk)
6285-10 FR Explosion bulge performance : HY-80 weldments : Vertical position : MIG process

WELD DEPOSITS (continued)

6285-11 FR Forged HY-80 : Isaacson Iron Works : Explosion bulge testing

6285-12 FR Notch-toughness properties : STS weldments : Explosion crack-starter tests

6285-13 FR Cast HY-80 : American Brake Shoe Co.

6285-14A FR Cast HY-80 steel plates : Birdsboro Corp.

6285-25 FR HY-100 : Rolled plate : Armco-Sheffield steel

WELD DEPOSITS -- CHEMICAL ANALYSIS

9300-1 TM13 HP-150 steel-filler wire system

9300-1 TM23 Welding : HY-100

9300-1 TM29 Comparative weldability : 50,000 to 150,000 psi yield strength steels : Controlled thermal severity (CTS) test

9300-1 TM42 MIG welding : HY-130/150

9300-1 TM49 Weldability : HY-130/150 steel covered electrodes

9300-1 TM50 12% nickel maraging steels : Filler wire system

9300-1 TM52 Covered electrode : Metallic arc welding : HY-130/150

9300-1 PR3 Welding electrodes : HY-100

6285-3 FR Mechanical properties : Iron alloys : Explosion bulge tests : Heat treatable electrodes

6285-5 FR Explosion bulge properties : HY-80 : Electro-slag welding process

WELD DEPOSITS -- MECHANICAL PROPERTIES

9300-1 TM3 Short arc M.I.G. : Vertical position welding : HY-80

9300-1 TM23 Welding : HY-100

9300-1 TM29 Comparative weldability : 50,000 to 150,000 psi yield strength steels : Controlled thermal severity (CTS) test

9300-1 TM41 MIG and TIG welding : HY-130/150 : As welded : Stress relieved

9300-1 TM42 MIG welding : HY-130/150

9300-1 TM49 Weldability : HY-130/150 steel covered electrodes

9300-1 TM50 12% nickel maraging steels : Filler wire system

9300-1 TM52 Covered electrode : Metallic arc welding : HY-130/150

9300-39 PR1 Welding repair procedure : Class 1, nickel-molybdenum steel shafting

6285-5 FR Explosion bulge properties : HY-80 : Electro-slag welding process

6285-5S FR Explosion bulge performance : Mechanical properties : HY-80 weldments : Electro-slag process

Weld metal see WELD DEPOSITS

Weldability: see appropriate steel alloys

WELDING -- AUTOMATIC

9300-1 TM12 "Narrow-Gap" welds : HY-80

9300-1 TM36 HY-180/210 : Explosion bulge testing : 9Ni-4Co steel alloy weldments

9300-1 TM48 HY-180/210 : Explosion bulge testing : 9Ni-4Co type steel weldment

9300-39 PR2 Weldability : Nickel modified Hadfield steel chain links

WELDING -- SEMIAUTOMATIC

9300-1 TM5 Semi-automatic : MIG : HY-80 : Linde 103 filler wire
6285-12 PR1 STS weldments : Explosion bulge tests
6285-12 FR Notch-toughness properties : STS weldments : Explosion crack-starter tests

WELDING INSPECTION -- MAGNETIC PARTICLE

9300-1 TM2 Embrittled 110-18 weld metal : Fatigue life : HY-80 : Butt weldments
9300-1 TM3 Short arc M.I.G. : Vertical position welding : HY-80
9300-1 TM7 Fatigue : Explosion bulge properties : HY-80 : Butt weldments
9300-1 TM8 Weldability : I-N 100 (135,000 psi yield strength)
9300-1 TM10 Properties : 110-18 : STS : HY-100
9300-1 TM16 Properties : I-N 100 (135,000 psi yield strength)
9300-1 TM22 Properties : 130 to 150,000 psi : Steel weldments : Filler wire (LLR1)
9300-1 TM25 Short arc MIG : Out-of-position welding : HY-80
9300-1 TM35 NASL circular fillet weldability (NCFW) test
9300-1 TM38 Peening : Properties : HY-80/MIL-110-18 weldments
9300-1 TM42 MIG welding : HY-130/150
9300-1 TM45 Pulsed arc process : Welding : HY-80 : HY-130/150 (5% Ni)
9300-1 TM52 Covered electrode : Metallic arc welding : HY-130/150
9300-1 PR3 Welding electrodes : HY-100
6160-2 PR2 Welding : Fatigue properties : HY-80
6285-3 FR Mechanical properties : Iron alloys : Explosion bulge tests : Heat treatable electrodes
6285-4 FR Weldability : Cast HY-80
6285-5 FR Explosion bulge properties : HY-80 : Electro-slag welding process
6285-6 PR2 Notch-toughness properties : MIL-260 welds : STS plate
6285-12 FR Notch-toughness properties : STS weldments : Explosion crack-starter tests
6285-14 FR Cast HY-80 : Birdsboro Corp. : Explosion bulge testing
6285-17 FR HY-80 submerged arc weldments : Experimental flux L-732 : Experimental filler wire 14N : Battelle Memorial Institute
6285-20 FR HY-80 submerged arc : Flux (Unionmelt 103) : Electrode (Oxweld 103) : Linde Co. : Explosion bulge tests

WELDING INSPECTION -- METALLOGRAPHIC

9300-1 TM16 Properties : I-N 100 (135,000 psi yield strength)
9300-1 TM29 Comparative weldability : 50,000 to 150,000 psi yield strength steels : Controlled thermal severity (CTS) test
9300-1 TM38 Peening : Properties : HY-80/MIL-110-18 weldments
9300-1 TM50 12% nickel maraging steels : Filler wire system
9300-39 PR1 Welding repair procedure : Class 1, nickel-molybdenum steel shafting
6160-2 PR2 Welding : Fatigue properties : HY-80
6160-2 PR6 Fatigue : Iron base alloys : Tee-fillet welds : HY-80 : Compression
6285-1 PR1 HY-80 and HY-100 : Weldability
6285-4 FR Weldability : Cast HY-80
6285-25 FR HY-100 : Rolled plate : Armco-Sheffield steel

WELDING INSPECTION -- OIL PENETRATION

9300-1 TM7 Fatigue : Explosion bulge properties : HY-80 : Butt weldments
9300-1 TM26 Welding : Fatigue properties : HY-100 steel tee-fillet welded plates
9300-1 TM40 Fatigue life : HY-130/150
9300-23 TM5 Overstrain : Residual stresses and fatigue

WELDING INSPECTION -- RADIOGRAPHIC

9300-1 TM2 Embrittled 110-18 weld metal : Fatigue life : HY-80 : Butt weldments
9300-1 TM3 Short arc M.I.G. : Vertical position welding : HY-80
9300-1 TM7 Fatigue : Explosion bulge properties : HY-80 : Butt weldments
9300-1 TM8 Weldability : I-N 100 (135,000 psi yield strength)
9300-1 TM13 HP-150 steel-filler wire system
9300-1 TM16 Properties : I-N 100 (135,000 psi yield strength)
9300-1 TM30 HY-180/210 : HP 9-4-25 : 7-1/2Ni-4Co-Cr, Mo weld deposits
9300-1 TM41 MIG and TIG welding : HY-130/150 : As welded : Stress relieved
9300-1 TM42 MIG welding : HY-130/150
9300-1 TM45 Pulsed arc process : Welding : HY-80 : HY-130/150 (5% Ni)
9300-1 TM48 HY-180/210 : Explosion bulge testing : 9Ni-4Co type steel weldment
9300-1 TM50 12% nickel maraging steels : Filler wire system
9300-1 TM52 Covered electrode : Metallic arc welding : HY-130/150
9300-1 PR3 Welding electrodes : HY-100
9300-39 PR2 Weldability : Nickel modified Hadfield steel chain links
6285-4 FR Weldability : Cast HY-80
6285-5 FR Explosion bulge properties : HY-80 : Electro-slag welding process
6285-6 PR2 Notch-toughness properties : MIL260 welds : STS plate
6285-12 FR Notch-toughness properties : STS weldments : Explosion crack-starter tests
6285-14 FR Cast HY-80 : Birdsboro Corp. : Explosion bulge testing
6285-15 FR British steel QT-35 weldments : Explosion bulge testing

WELDING INSPECTION -- ULTRASONIC

6160-2 PR2 Welding : Fatigue properties : HY-80
6160-2 PR6 Fatigue : Iron base alloys : Tee-fillet welds : HY-80 : Compression

WELDING POSITION -- FLAT

9300-1 TM5 Semi-automatic : MIG : HY-80 : Linde 103 filler wire
9300-1 TM41 MIG and TIG welding : HY-130/150 : As welded : Stress relieved
9300-1 TM42 MIG welding : HY-130/150
9300-1 TM47 Stress relief : Toughness : HY-130/150 base plate and weld metal
9300-1 TM52 Covered electrode : Metallic arc welding : HY-130/150

WELDING POSITION -- HORIZONTAL

6160-7 FR "Blast-Seel" : Wheelabrator Corp. : Pre-weld primer : HY-80
6285-9 FR Notch-toughness properties : Welds : CVA-63 (Kitty Hawk)

WELDING POSITION -- OVERHEAD
9300-1 TM25 Short arc MIG : Out-of-position welding : HY-80
9300-1 TM42 MIG welding : HY-130/150
6285-9 FR Notch-toughness properties : Welds : CVA-63 (Kitty Hawk)
6285-12 FR Notch-toughness properties : STS weldments : Explosion crack-starter tests

WELDING POSITION -- VERTICAL
9300-1 TM3 Short arc MIG : Vertical position welding : HY-80
9300-1 TM41 MIG and TIG welding : HY-130/150 : As welded : Stress relieved
9300-1 TM42 MIG welding : HY-130/150
9300-1 TM47 Stress relief : Toughness : HY-130/150 base plate and weld metal
9300-1 TM52 Covered electrode : Metallic arc welding : HY-130/150
6285-10 FR Explosion bulge performance : HY-80 weldments : Vertical position : MIG process

WELDING POSITION -- VERTICAL-DOWN VS. VERTICAL-UP
9300-1 TM52 Covered electrode : Metallic arc welding : HY-130/150

Welding processes -- Covered electrode <u>see</u> ELECTRODES -- COVERED

WELDING PROCESSES -- ELECTRO-SLAG
6285-5 FR Explosion bulge properties : HY-80 : Electro-slag welding process
6285-5S FR Explosion bulge performance : Mechanical properties : HY-80 weldments : Electro-slag process

WELDING PROCESSES -- FLASH BUTT
9300-39 PR2 Weldability : Nickel modified Hadfield steel chain links

WELDING PROCESSES -- MIG (METAL-INERT-GAS) <u>see also</u> WELDING PROCESSES -- MIG SHORT ARC; SHIELDING GAS
9300-1 TM5 Semi-automatic : MIG : HY-80 : Linde 103 filler wire
9300-1 TM9 Explosion crack-starter : CVA-66 : STS
9300-1 TM12 "Narrow-Gap" welds : HY-80
9300-1 TM13 HP-150 steel-filler wire system
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A bibliography and subject index have been prepared of Naval Applied Science Laboratory technical reports covering pertinent information on 80,000 psi to 210,000 psi yield strength steels, with emphasis on HY-80 and HY-130 weldments. Work in these reports deals with transfer of basic laboratory data to production applications. Primary areas of concern are weldability, welding procedures and materials, static and dynamic mechanical properties (including large scale fatigue), explosion bulge, forming, stress relieving and residual stresses.

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