



AUSTRALIAN STEEL INSTITUTE

KNOWLEDGE SERIES MODULE 3: THE METALLURGY OF STEEL

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Introduction to the Knowledge Series
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Steel and Steel Making
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The Metallurgy of Steel
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The Engineering Properties of Steel
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Structural Steel Types
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The Steel Supply Chain
- KNOWLEDGE SERIES MODULE 7
Steel Quality and Compliance
- KNOWLEDGE SERIES MODULE 8a
Steel Structures – An Introduction
- KNOWLEDGE SERIES MODULE 8b
Steel Structures – Beyond the Basics

COURSE OUTLINE

Lesson 1: The metallurgy of steel

- Structure of pure iron
- Crystal formation
- Iron-carbon interaction
- Phase diagrams
- Steel stress-strain behaviour
- Tensile coupon test
- Stress-strain curve
- Steel defects
- Strengthening of steel
- Alloying elements

Lesson 2: Types of steel

- Low carbon / carbon manganese steels
- High strength low alloy steels
- Low – medium carbon alloy machinery steels
- High carbon pearlitic steels
- High alloy steels (tool steels)
- Advanced high strength steels
- Stainless steels

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