

Comparison of BS and BS EN for steel materials

Appendix

This table only highlights the comparison of BS and BS EN on steel materials, which are relevant to plan approval.

Title of BS	BS	BS EN/other standards	Title of BS EN/other standards
Specification for weldable structural steels	BS 4360: 1986 (Superseded, Withdrawn)	BS EN 10025: 1-6: 2004 (Current)	Hot rolled products of structural steels Part 1: General technical delivery conditions Part 2: Technical delivery conditions for non-alloy structural steels Part 3: Technical delivery conditions for normalized/normalized rolled weldable fine grain structural steels Part 4: Technical delivery conditions for thermomechanical rolled weldable fine grain structural steels Part 5: Technical delivery conditions for

		BS EN 10025-6 : 2004 +A1 : 2009	structural steels with improved atmospheric corrosion resistance Part 6: Technical delivery conditions for flat products of high yield strength structural steels in the quenched and tempered condition
		BS EN 10210-1: 2006 (Current)	Hot finished structural hollow sections of non-alloy and fine grain structural steels Part 1: Technical delivery requirements
		BS EN 10164: 2004 (Current)	Steel products with improved deformation properties perpendicular to the surface of the product – Technical

		BS EN 10219-1: 2006 (Current)	delivery conditions Cold formed welded structural hollow sections of non-alloy and fine grain steels Part 1: Technical delivery requirements
--	--	----------------------------------	--

Comparison of BS and BS EN for DT of steel materials

This table only highlights the comparison of BS and BS EN on Destructive Testing of steel materials, which are relevant to plan approval.

Title of BS	BS	BS EN/other standards	Title of BS EN/other standards
Method for tensile testing of metals (including aerospace materials)	BS 18:1987 (Superseded, Withdrawn)	BS EN 10002-1:2001 (withdrawn)	Tensile testing of metallic materials. Part 1: Method of test at ambient temperature
		and ISO 6892: 1998 (withdrawn) both standard are replaced by	Metallic materials – Tensile testing at ambient temperature
	New	BS EN ISO 6892-1: 2009 (Current)	Metallic materials – Tensile testing Part 1: Method of test at ambient temperature

Methods for notched bar tests. Part 2: The Charpy V-notch impact test on metals	BS 131-2:1972 (Superseded, Withdrawn)	BS EN 10045-1: 1990 (Superseded, Withdrawn) Replaced by	Charpy impact test on metallic materials. Part 1: Test method (V- and U-notches)
		BS EN ISO 148-1: 2010 (Current)	Metallic materials – Charpy pendulum impact test. Part 1: Test method
Method for Brinell hardness test and for verification of Brinell hardness testing machines	BS 240: 1986 (Superseded, Withdrawn)	BS EN ISO 6506: 1-3: 2005 (Current)	Metallic materials. Brinell hardness test. Part 1: Test method. Part 2: Verification and calibration of testing machines Part 3: Calibration of reference blocks
Method for Vickers hardness test and for verification of Vickers hardness testing machines	BS 427:1990 (Superseded, Withdrawn)	BS EN ISO 6507: 1-3: 2005 (Current)	Metallic materials. Vickers hardness test. Part 1: Test method. Part 2: Verification and calibration of testing

			machines Part 3: Calibration of reference blocks
--	--	--	---

Comparison of BS and BS EN for Dimensional Tolerances

This table only highlights the comparison of BS and BS EN on dimensional tolerances of steel products, which are relevant to plan approval.

Title of BS	BS	BS EN/other standards	Title of BS EN/other standards
Structural steel sections Part 1: Specification for hot rolled sections	BS 4-1: 2005 (Current)		
	-	BS EN 10024: 1995 (Current)	Hot rolled taper flange I sections. Tolerances on shape and dimensions.
Weldable structural steels	BS 4360:1990 (Superseded, Withdrawn)	BS EN 10029: 1991 (Revised, Withdrawn) BS EN 10029: 2010 (Current)	Specification for tolerances on dimensions, shape and mass for hot rolled steel plates 3 mm thick or above Hot-rolled steel plates 3 mm thick or above. Tolerances on dimensions and shape
Structural steel sections	BS 4-1: 1980	BS EN 10034: 1993	Structural Steel I and H

Part 1: Specification for hot rolled sections	(Superseded, Withdrawn)	(Current)	sections. Tolerances on shape and dimensions.
	-	BS EN 10055: 1996 (Current)	Hot rolled steel equal flange tees with radiused root and toes. Dimensions and tolerances on shape and dimensions.
Hot rolled structural steel sections Part 4: Equal and unequal angles	BS 4848-4:1972 (Superseded, Withdrawn)	BS EN 10056-1: 1999 (Current) BS EN 10056-2: 1993 (Current)	Specification for structural steel equal and unequal angles. Part 1: Dimensions. Specification for structural steel equal and unequal angles. Part 2: Tolerances on shape and dimensions.
Hot rolled structural steel sections Part 2: Specification for hot-finished hollow sections	BS 4848-2: 1991 (Superseded, Withdrawn)	BS EN 10210-2: 1997 (withdrawn) Replaced by BS EN 10210-2: 2006 (current)	Hot finished structural hollow sections of non-alloy and fine grain structural steels. Part 2: Tolerances, dimensions and sectional properties.
	-	BS EN 10279:2000	Hot rolled steel

		(Current)	channels. Tolerances on shape, dimension and mass.
Specification for welded cold formed steel structural hollow sections	BS 6363:1983 (Superseded, Withdrawn)	BS EN 10219-2: 1997 withdrawn Replaced by BS EN 10219-2: 2006 (current)	Cold formed welded structural sections of non-alloy and fine grain steels. Part 2: Tolerances, dimensions and sectional properties.

Comparison of BS and BS EN on Corrosion Protection

This table only highlights the comparison of BS and BS EN on Corrosion Protection of steel, which are relevant to plan approval.

Title of BS	BS	BS EN/other standards	Title of BS EN/other standards
	-	BS EN ISO 11124-1:1997 (Current)	Preparation of steel substrates before application of paints and related products. Specifications for metallic blast-cleaning abrasives. Part 1: General introduction and classification.
	-	BS EN ISO 11124-2:1997 (Current)	Preparation of steel substrates before application of paints and related products.

			Specifications for metallic blast-cleaning abrasives. Part 2: Chilled iron.
Specification for chilled iron shot and grit	BS 2451: 1963 (Superseded, Withdrawn)	BS EN ISO 11124-3: 1997 (Current)	Preparation of steel substrates before application of paints and related products. Specifications for metallic blast-cleaning abrasives. Part 3: High carbon cast-steel shot and grit.
		BS EN ISO 11124-4: 1997 (Current)	Preparation of steel substrates before application of paints and related products. Specifications for metallic blast-cleaning abrasives. Part 4: Low carbon cast-steel shot.
Specification for sheradized coatings on iron and steel articles	BS 4921: 1973 (Withdrawn, superseded)	BS 4921: 1988 (Current)	Specification for sherardized coatings on iron and steel.
Specification for metallic zinc-rich priming paint (organic media)	BS 4652: 1971 (Withdrawn, superseded)	BS 4652: 1995 (Current)	Specification for zinc-rich priming paint (organic media)

Specification for sprayed metal coatings. Part 1: Protection of iron and steel by aluminium and zinc against atmospheric corrosion	BS 2569-1: 1964 (Withdrawn, superseded)	BS EN 22063: 1994 (Superseded, Withdrawn) by BS EN ISO 2063: 2005 (Current)	Metallic and other inorganic coatings. Thermal spraying. Zinc, aluminium and their alloys. Thermal spraying. Metallic and other inorganic coatings. Zinc, aluminium and their alloys.
Specification for hot-dip galvanized coatings on iron and steel articles	BS 729 : 1971 (Superseded, Withdrawn)	BS EN ISO 1461: 1999 (Withdrawn)	Hot-dip galvanized coatings on fabricated iron and steel articles. Specifications and test methods.

		BS EN ISO 1461: 2009 (Current)	Hot-dip galvanized coatings on fabricated iron and steel articles. Specifications and test methods. (ISO 1461 : 2009)
--	--	-----------------------------------	---

Comparison of BS and BS EN for Welding consumables

This table only highlights the comparison of BS and BS EN on welding consumables, which are relevant to plan approval.

Title of BS	BS	BS EN/other standards	Title of BS EN/other standards
Covered carbon and carbon manganese steel electrodes for manual metal-arc welding	BS 639:1986 (Superseded, Withdrawn)	BS EN 499: 1995 (Superseded, Withdrawn) by BS EN ISO 2560: 2005 (withdrawn) replaced by BS EN ISO 2560 : 2009 (Current)	Welding consumables- Covered electrodes for manual metal arc welding of non-alloy and fine grain steels – Classification Welding consumables- Covered electrodes for manual metal arc welding of non-alloy and fine grain steels - Classification
Filler rods and wires for	BS 2901-1: 1983	BS EN 440: 1995	Welding consumables-

gas-shielded arc welding. Part 1: Ferritic steels	(Superseded, Withdrawn)	(withdrawn) Replaced by BS EN ISO 14341: 2008 (Revised, Withdrawn) BS EN ISO 14341: 2011 (Current)	Wire electrodes and deposits for gas shielded metal arc welding of non-alloy and fine grain steels – Classification. Welding consumables. Wire electrodes and weld deposits for gas shielded metal arc welding of non alloy and fine grain steels. Classification
Specification for electrode wires and fluxes for the submerged arc welding of carbon steel and medium-tensile steel	BS 4165: 1984 (Superseded, Withdrawn)	BS EN 756: 2004 (Superseded, Withdrawn) Replaced by	Welding consumables- Solid wires, solid wire-flux and tubular cored electrode-flux combinations for submerged arc welding of non-alloy and fine grain steels – Classification
		BS EN ISO 14171: 2010 (Current)	Welding consumables – Solid wire electrodes, tubular cored electrodes and electrode/flux combinations for submerged arc welding of non alloy and fine grain

			steels – Classification
Specification for carbon and carbon-manganese steel tubular cored welding electrodes	BS 7084: 1989 (Revised, Withdrawn)	BS EN 758: 1997 (Superseded, Withdrawn) Replaced by BS EN ISO 17632 : 2008 (Current)	Welding consumables- Tubular cored electrodes for metal arc welding with and without a gas shield of non-alloy and fine grain steels – Classification Welding consumables- Tubular cored electrodes for gas shielded and non-gas shielded metal arc welding of non-alloy and fine grain steels – Classification”

Comparison of BS and BS EN for Welding Standard, Procedure, Coordination and Welder

This table only highlights the comparison of BS and BS EN on Welding Standard, Procedure, Coordination and Welder, which are relevant to plan approval.

Title of BS	BS	BS EN/other standards	Title of BS EN/other standards
Specification for arc welding of carbon and carbon manganese steels	BS 5135:1984 (Superseded, Withdrawn)	BS EN 1011-1:1998 (Revised, Withdrawn) Replaced by	Welding. Recommendations for welding of metallic materials. General guidance for arc welding

		BS EN 1011-1: 2009 (Current)	Welding. Recommendations for welding of metallic materials. General guidance for arc welding
		BS EN 1011-2:2001 (Current)	Welding. Recommendations for welding of metallic materials. Arc welding of ferritic steels

Specification for approval testing of welding procedures. Part 1: Fusion welding of steel.	BS 4870-1:1981 (Superseded, Withdrawn)	BS EN ISO 15614-1: 2004 (+ A1 : 2008 / +A2 : 2012) (Current)	Specification and qualification of welding procedures for metallic materials. Welding procedure test. Part 1: Arc and gas welding of steels and arc welding of nickel and nickel alloys
Part 3: Arc welding of tube to tube-plate joints in metallic materials	BS 4870-3:1985 (Superseded, Withdrawn)	BS EN ISO 15614-8:2002 (Current)	Specification and qualification of welding procedures for metallic materials – welding procedure test Part 8: Welding of tubes to tube-plate joints
Part 4: Specification for automatic fusion welding of metallic materials, including welding operator approval	BS 4870-4:1988 (Superseded, Withdrawn)	BS EN 1418: 1998 (Current)	Welding personnel. Approval testing of welding operators for fusion welding and resistance weld setters for fully mechanized and automatic welding of metallic materials.
	-	BS EN 719: 1994	Welding co-ordination.

		<p>(Superseded, Withdrawn)</p> <p>Replaced by</p> <p>BS EN ISO 14731 : 2006 (Current)</p>	Tasks and responsibilities
	-	<p>BS EN 729-2: 1995 (Superseded, Withdrawn) Replaced by</p> <p>BS EN ISO 3834-2: 2005 (Current)</p>	<p>Quality requirements for welding. Fusion welding of metallic materials. Comprehensive quality requirements.</p> <p>Quality requirements for fusion welding of metallic materials. Part 2: Comprehensive quality requirements.</p>
	-	<p>BS EN 729-3: 1995 (Superseded, Withdrawn) by</p>	<p>Quality requirements for welding. Fusion welding of metallic materials. Part 3: Standard quality requirements.</p>

		BS EN ISO 3834-3:2005 (Current)	Quality requirements for fusion welding of metallic materials. Part 3: Standard quality requirements
	-	BS EN 729-4:1995 (Superseded, Withdrawn) by BS EN ISO 3834-4:2005 (Current)	Quality requirements for welding. Fusion welding of metallic materials. Part 4: Elementary quality requirements. Quality requirements for fusion welding of metallic materials. Part 4: Elementary quality requirements
Specification for approval testing of welders to approved welding procedures. Fusion welding of steel	BS 4871-1:1982 (Superseded, Withdrawn)	BS EN 287-1:2004 (Superseded, Withdrawn) Replaced by	Qualification test of welders. Fusion welding. Part 1: Steels

		BS EN 287-1:2011 (Current)	Qualification test of welders. Fusion welding. Part 1: Steels
Specification for approval testing of welders to approved welding procedures. Part 3: Arc welding of tube to tube-plate joints in metallic materials	BS 4871-3:1985 (Current)		
Specification for approval testing of welders when welding procedure approval is not required Part 1: Fusion welding of steel	BS 4872-1: 1982 (Current)		

Comparison of BS and BS EN for DT of welds

This table only highlights the comparison of BS and BS EN on Destructive Testing of welds, which are relevant to plan approval.

Title of BS	BS	BS EN/other standards	Title of BS EN/other standards
Methods of destructive testing, fusion welded joints and weld metal in steel	BS 709:1983 (Superseded, Withdrawn)	BS EN 875: 1995 (Superseded, Withdrawn) Replaced by	Destructive tests on welds in metallic materials. Impact tests. Test specimen location, notch orientation

		<p>BS EN ISO 9016: 2011 (Superseded, Withdrawn) Replaced by</p>	<p>and examination.</p> <p>Destructive tests on welds in metallic materials. Impact tests. Test specimen location, notch orientation and examination</p>
		<p>BS EN ISO 9016 : 2012 (Current)</p>	<p>Destructive tests on welds in metallic materials. Impact tests. Test specimen location, notch orientation and examination (ISO9016: 2012)</p>
		<p>BS EN 876: 1995 (Superseded, Withdrawn) Replaced by</p>	<p>Destructive tests on welds in metallic materials. Longitudinal tensile test on weld metal in fusion welded joints.</p>
		<p>BS EN ISO 5178: 2011 (Current)</p>	<p>Destructive tests on welds in metallic materials. Longitudinal tensile test on weld metal in fusion welded joints</p>

BS EN 895: 1995 (Superseded, Withdrawn) Replaced by	Destructive tests on welds in metallic materials. Transverse tensile test.
BS EN ISO 4136: 2011 (Superseded, Withdrawn) Replaced by	Destructive tests on welds in metallic materials. Transverse tensile test
BS EN ISO 4136 : 2012 (Current)	Destructive tests on welds in metallic materials. Transverse tensile test (ISO4136: 2012)
BS EN 910: 1996 (Superseded, Withdrawn) Replaced by	Destructive tests on welds in metallic materials. Bend tests.
BS EN ISO 5173: 2010 + A1 : 2011 (Current)	Destructive tests on welds in metallic materials - Bend tests.
BS EN 1043-1: 1996 (Superseded, Withdrawn)	Destructive tests on welds in metallic materials. Hardness testing. Part 1: Hardness test on arc

		Replaced by	welded joints.
		BS EN ISO 9015 –1 : 2011 (Current)	Destructive tests on welds in metallic materials. Hardness testing. Part 1: Hardness test on arc welded joints.
		BS EN 1320: 1997 (Current)	Destructive test on welds in metallic materials. Fracture tests.
		BS EN 1321: 1997 (Current)	Destructive test on welds in metallic materials. Macroscopic and microscopic examination of welds

Comparison of BS and BS EN for NDT of welds

This table only highlights the comparison of BS and BS EN on Non-Destructive Testing of welds, which are relevant to plan approval.

Title of BS	BS	BS EN/other standards	Title of BS EN/other standards
-------------	----	-----------------------	--------------------------------

Code of practice. Visual inspection of fusion welded joints.	BS 5289:1976 (Superseded, Withdrawn)	BS EN 970:1997 (Superseded, Withdrawn) Replaced by BS EN ISO 17637:2011 (Current)	Non-destructive examination of fusion welds – Visual examination Non-destructive testing of welds. Visual testing of fusion-welded joints
Method for penetrant flaw detection.	BS 6443:1984 (Superseded, Withdrawn)	BS EN 571-1:1997 (Current)	Non-destructive testing – Penetrant testing Part 1: General principles
Method for magnetic particle flaw detection	BS 6072:1981 (Current, Obsolescent, Superseded)	BS EN 1290:1998 (withdrawn) replaced by BS EN ISO 17638 : 2009 (Current) BS EN ISO 9934-1:2001 (Current)	Non-destructive examination of welds – Magnetic particle examination of welds Non-destructive testing of welds – Magnetic particle testing Non-destructive testing. Magnetic particle testing.

			Part 1: General principles.
Method for ultrasonic examination of welds Part 1: Methods for manual examination of fusion welds in ferritic steels	BS 3923-1:1986 (Superseded, Withdrawn)	BS EN 1714:1998 (Superseded, Withdrawn) Replaced by BS EN ISO 17640:2010 (Current)	Non-destructive testing of welded joints – Ultrasonic testing of welded joints Non-destructive testing of welds. Ultrasonic testing. Techniques, testing levels, and assessment
Radiographic examination of fusion welded butt joints in steel. Part 1: Methods for steel 2 mm up to and including 50 mm thick Part 2: Methods for steel over 50 mm up to and including 200 mm thick	BS 2600-1 & 2:1983 (Superseded, Withdrawn)	BS EN 1435:1997 (Superseded, Withdrawn) Replaced by BS EN ISO 17636-1 : 2013 (Current)	Non-destructive examination of welds. Radiographic examination of welded joints. Non-destructive testing of welds. Radiographic testing Part 1 : X and Gamma –ray techniques with film.

Comparison of BS and BS EN for Fastener, Nut and Washer

This table only highlights the comparison of overdue and new standards for Fastener, Nut and Washer, which are relevant to plan approval.

Title of BS	BS	BS EN/other standards	Title of BS EN/other standards
		BS EN ISO 4014: 2001 (Revised, Withdrawn)	Hexagon head bolts. Product grades A and B
		BS EN ISO 4014: 2011 (Current)	Hexagon head bolts. Product grades A and B
		BS EN ISO 4016: 2001 (Revised, Withdrawn)	Hexagon head bolts. Product grade C
		BS EN ISO 4016: 2011 (Current)	Hexagon head bolts. Product grade C
		BS EN ISO 4017: 2001 (Revised, Withdrawn)	Hexagon head screws. Product grades A and B
		BS EN ISO 4017: 2011 (Current)	Hexagon head screws. Product grades A and B
		BS EN ISO 4018: 2001 (Revised, Withdrawn)	Hexagon head screws. Product grade C
		BS EN ISO 4018: 2011 (Current)	Hexagon head screws. Product grade C

Comparison of BS and BS EN on Matching Bolt, Nut and Washer & HSFG Bolt

This table only highlights the comparison of BS and BS EN on Matching Bolt, Nut and Washer & HSFG Bolt

Grade	Title of BS	BS	BS EN/other standard	Title of BS EN/Other standards
4.6	Specification for ISO metric black hexagon bolts, screws and nuts. Metric units.	Bolt BS 4190:2001 (Current)	BS EN ISO 4018:2011 (Current)	Hexagon head screws. Product grade C
	Specification for holding down bolts	BS 7419:1991 (Current)	BS EN ISO 4016:2011 (Current)	Hexagon head bolts. Product grade C
	Specification for ISO metric black hexagon bolts, screws and nuts. Metric units	Nut BS 4190:2001 (Current) (Grade 4)	BS EN ISO 4034:2001 (Superseded, Withdrawn) Replaced by BS EN ISO 4034 : 2012 (Current)	Hexagon nuts. Product grade C Hexagon regular nuts (style 1). Product grades C

	Specification for metal washers for general engineering purposes. Metric series.	Washer BS 4320:1968 (Current)	BS EN ISO 7091:2000 (Current)	Plain washers. Normal series. Product grade C
8.8	Specification for ISO metric black hexagon bolts, screws and nuts.	Bolt BS 4190:2001 (Current)	BS EN ISO 4017:2011 (Current)	Hexagon head screws. Product grades A and B
	Specification for holding down bolts	BS 7419:1991 (Current)	BS EN ISO 4014:2011 (Current)	Hexagon head bolts. Product grades A and B
	Specification for ISO metric black hexagon bolts, screws and nuts.	Nut BS 4190:2001 (Current) (Grade 8)	BS EN ISO 4032:2001 (Superseded, Withdrawn) Replaced by BS EN ISO 4032 : 2012 (Current)	Hexagon nuts, style 1. Product grades A and B Hexagon regular nuts (style 1). Product grades A and B

	Specification for metal washers for general engineering purposes. Metric series.	Washer BS 4320:1968 (Current)	BS EN ISO 7091:2000 (Current)	Plain washers. Normal series. Product grade C
10.9	Specification for ISO metric black hexagon bolts, screws and nuts.	Bolt BS 4190:2001 (Current)	BS EN ISO 4017:2011 (Current)	Hexagon head screws. Product grades A and B
			BS EN ISO 4014:2011 (Current)	Hexagon head bolts. Product grades A and B
	Specification for ISO metric black hexagon bolts, screws and nuts.	Nut BS 4190:2001 (Current) (Grade 10)	BS EN ISO 4032:2001 (Superseded, Withdrawn) Replaced by BS EN ISO 4032 : 2012 (Current)	Hexagon nuts, style 1. Product grades A and B Hexagon regular nuts (style 1). Product grades A and B

	Specification for metal washers for general engineering purposes. Metric series.	Washer BS 4320:1968 (Current)	BS EN ISO 7091:2000 (Current)	Plain washers. Normal series. Product grade C
HSFG Bolt	<p>Specification for high strength friction grip bolts and associated nuts and washers for structural engineering. Part 1: General grade</p> <p>Specification for the use of high strength friction grip bolts in structural steelwork. Metric series. Part 1: General grade</p>	<p>General grade BS 4395-1: 1969 (Current, Superseded)</p> <p>BS 4604-1: 1970 (Current)</p>	BS EN 14399- Part 1 to 6 :2005 (Current)	<p>High-strength structural bolting assemblies for preloading.</p> <p>Part 1: General requirements</p> <p>Part 2: Suitability test for preloading</p> <p>Part 3: System HR. Hexagon bolt and nut assemblies</p> <p>Part 4: System HV. Hexagon bolt and nut assemblies</p> <p>Part 5: Plain washers</p>

				Part 6: Plain chamfered washers
HSFG Bolt	<p>Specification for high strength friction grip bolts and associated nuts and washers for structural engineering.</p> <p>Part 2: Higher grade bolts and nuts and general grade washers</p> <p>Specification for the use of high strength friction grip bolts in structural steelwork. Metric series.</p> <p>Part 2: Higher grade (parallel shank)</p>	<p>Higher grade BS 4395-2: 1969 (Current, Superseded)</p> <p>BS 4604-2: 1970 (Current)</p>	BS EN 14399- Part 1 to 6 :2005 (Current)	<p>High-strength structural bolting assemblies for preloading.</p> <p>Part 1: General requirements</p> <p>Part 2: Suitability test for preloading</p> <p>Part 3: System HR. Hexagon bolt and nut assemblies</p> <p>Part 4: System HV. Hexagon bolt and nut assemblies</p> <p>Part 5: Plain washers</p> <p>Part 6: Plain chamfered washers</p>

Notes: Any bolt assemblies which seize when being tightened shall be replaced.

(1) Nuts for galvanized or sheradized 8.8 bolts shall be class/grade 10.

(2) Nuts for sheradized 10.9 bolts shall be class/grade 12.