

TECHNICAL SPECIFICATION	TS260™	ISSUE 5
	Issued Revised	UNKNOWN 2014-01
Metallic Materials List of Alternative Material Specifications and Standards Only Authorised for Use on Standard Parts		

NOTE: The issue status of this document remains unchanged as there have been no changes to the technical content.

SAE INDUSTRY TECHNOLOGIES CONSORTIA AEROSPACE STANDARDS AND PART QUALIFICATION PROGRAM FOREWORD

On the 1st January 2015 the SAE Industry Technologies Consortia (SAE ITC) acquired the ADS Aerospace Standards, previously known as the Society of British Aerospace Companies (SBAC) Aerospace Standards. The SAE ITC established in 2003 operates as a trade association as part of the SAE International Enterprise providing a unique framework serving the automotive, aerospace, and commercial vehicle sectors. Clients include private companies, government agencies, individuals, and trade associations. Building consensus and breakthrough barriers to achieve solutions, and the ways by which those solutions take shape, are tailored to each client's individual needs.

The legal obligations and copyright authority of all Aerospace Standards that were issued by the ADS Group Limited are therefore assigned / transferred to the SAE ITC.

These Standards are produced by the SAE ITC with the assistance of, and for the benefit of the Aerospace Industry, as part of a continuous programme of Standardisation for Aerospace application under the control of the Technical Standards Committee (TSC) of the SAE ITC.

SAE ITC Standards are published as part of the series of SAE ITC Aerospace Industry Standards, and where appropriate, additional manufacturing and inspection requirements are issued as Reference Sheets (RS) or Technical Specifications (TS). It is the responsibility of those using or specifying a Standard to ensure the product, process, or manufacturer so used or specified, is appropriate for the task or role in question. The SAE ITC wishes to draw special attention to the fact Technical Specifications (TS) include testing and procedures by which a user or Design Authority can establish whether a particular manufacturer, prima facie, has the capability to produce hardware in accordance with the appropriate standards and related specifications.

The SAE ITC, its servants, or representatives accept no responsibility for the continued quality of hardware items produced against the relevant drawings and specifications; this responsibility remains with the user.

Whilst the SAE ITC takes all reasonable care in the preparation of its Standards, neither the SAE ITC, its officers, employees, servants, agents, or representatives, shall have any responsibility or liability whatsoever with respect to any act or omission (whether negligent or not) of whatsoever nature, or in connection with the preparation of the Standards or any part thereof. These responsibilities are those of the user or Design Authority. Users of SAE ITC Standards agree that any such liability on the part of the SAE ITC is excluded to the maximum extent permitted by law. SAE ITC Standards may be changed from time to time, and both users and manufacturers of these parts should ensure they are in possession of the latest issue of the Standards and supporting documentation before adoption or the commencement of production.

It is recommended that Technical Specification TS260, Metallic Materials List of Alternative Material Standards, be consulted prior to manufacture of SAE ITC products.

Each Standard is a facsimile or electronic reproduction of a master drawing and, therefore, any outline view scales stated are not necessarily reproduced accurately. A Master Index of all SAE ITC Aerospace Standards is published separately on the SAE ITC website.

All references to Standards include reference to RS and TS publications.

Details of this and any further information can be obtained from the SAE ITC.

SAE Industry Technologies Consortia provides that "This standard is published by SAE ITC to advance the state of technical and engineering sciences. The use of this standard is entirely voluntary and its applicability and suitability for any particular use, including any patent infringement arising therefrom, is the sole responsibility of the user."
Copyright © 2015 SAE ITC.

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording or otherwise, without prior written permission of SAE ITC.

TO PLACE A DOCUMENT ORDER: Tel: 877-606-7323 (inside USA and Canada)
Tel: +1 724-772-7545 (outside USA)
Fax: 724-776-0790
Email: CustomerService@sae.org
<http://itc.sae.org/>

TECHNICAL SPECIFICATION

No. TS260

METALLIC MATERIALS

LIST OF ALTERNATIVE MATERIAL SPECIFICATIONS & STANDARDS ONLY AUTHORISED FOR USE ON ADS STANDARD PARTS

RATIONALE

Fifth issue of specification.

Revised to amend status of referenced and alternative specifications, to delete entry for BS HR 251 following its re-instatement as current by BSI, add alternatives for BS HR 650 and to delete Appendix A and Appendix B.

For full details of changes, refer to supplementary ADS Amendment Record document TS260-AR.

Issued by: **Technical Standards Committee**
ADS Group Limited
Registered in England and Wales no. 7016635

ADS Technical Specification No. TS260

METALLIC MATERIALS

LIST OF ALTERNATIVE MATERIAL SPECIFICATIONS & STANDARDS ONLY AUTHORISED FOR USE ON ADS STANDARD PARTS

CONTENTS

Title Page

Foreword

SECTIONS

1. Scope
2. Referenced Documents
3. Introduction
4. Index of Material Specifications
5. Tables of Referenced Materials & Alternatives

Table 1	Aluminium Alloys
Table 2	Non-Corrosion Resisting Steels
Table 3	Corrosion Resisting Steels
Table 4	Heat Resisting Alloys
Table 5	Copper Alloys

1. **SCOPE**

This document provides a list of authorised alternative metallic material specifications and standards for withdrawn, obsolescent or partially superseded British Standard (BS) Aerospace and General Engineering and MoD Directorate of Technical Development (DTD) series material specifications referenced on ADS Standard Parts drawings in the AGS and AS series.

2. **REFERENCED DOCUMENTS**

2.1 **Informative References**

The following documents, in whole or in part, are informatively referenced in this standard. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

TS95	ADS Recommendations for Metallic Material Specifications & Standards to be used for New Designs.
TS96	ADS Technical Specification for Similar Metallic Material Specifications & Standards.
EN 515	Aluminium and Aluminium Alloys — Wrought products — Temper Designations.
EN 1706	Aluminium and Aluminium Alloys - Castings – Chemical Composition and Mechanical Properties.
ESDU 00932	Metallic Materials Data Handbook.

2.2 **Listed Publication bodies**

EN	European Committee for Standardization (CEN). Available from National Standards Bodies e.g. British Standards Institution (BSI).
ESDU	IHS ESDU.
TS	ADS Group Limited.

3. **INTRODUCTION**

- 3.1 In view of the difficulty in obtaining material supplies for the manufacture of ADS Standard Parts in the AGS and AS series, the ADS Metallic Materials Special Interest Group (MMSIG) have approved the alternatives (with the applicable restrictions where stated) listed in this document.
- 3.2 The authorised alternatives listed in the Tables are only applicable to ADS Standard Parts and shall not be regarded as general alternatives for applications other than ADS Standard Parts.
- 3.3 Within the tables, only the basic specification of the referenced and alternative is specified, however, any edition or revision is applicable.
- 3.4 Reference to any EN material standard means the National implementation of that standard e.g. BS EN.

- 3.5 Reference to any prEN material standard means an ASD-STAN Prestandard.
- 3.6 For other applications, reference should be made to TS95 and TS96.
- 3.7 Design properties for some of the materials included in this document are available in ESDU 00932.
- 3.8 The following symbols and abbreviation are used in the Tables:
- | | | |
|-------|---|---------------------------------|
| a | : | Thickness |
| D | : | Diameter |
| D_e | : | Heat treatment ruling section |
| f_t | : | Tensile strength |
| t_2 | : | 0.2% tensile proof stress |
| PCGC | : | Peripheral Coarse Grain Control |

4. INDEX OF MATERIAL SPECIFICATIONS

The following withdrawn, obsolescent and partially superseded material specifications are referenced on AGS / AS drawings:

MATERIAL SPECIFICATION REFERENCED	FORM	TABLE	MATERIAL SPECIFICATION REFERENCED	FORM	TABLE
BS 265	Sheet, strip, foil	5	DTD 124	Sheet, strip	2
BS 885	Tube	5	DTD 130	Bar, extrusions	1
BS 889	Sheet, strip, foil	5	DTD 130	Forgings	1
BS 920	Castings	5	DTD 133	Castings	1
BS 932	Castings	5	DTD 166	Sheet, strip	3
BS 2870	Sheet, strip, foil	5	DTD 171	Sheet, strip	3
BS 2872	Forgings	5	DTD 187	Strip	2
			DTD 188	Bar	2
BS HR 650	Bar, wire	4	DTD 188	Forgings	2
			DTD 213	Sheet, strip	1
BS L 1	Bar, extrusions	1	DTD 253	Tube	5
BS L 3	Sheet, strip	1	DTD 298	Castings	1
BS L 38	Sheet, strip	1	DTD 304	Castings	1
BS L 39	Bar, extrusions	1	DTD 310	Tube	1
BS L 62	Tube	1	DTD 323	Tube	5
BS L 64	Bar, extrusions	1	DTD 364	Bar, extrusions	1
BS L 65	Bar, extrusions	1	DTD 364	Forgings	1
BS L 70	Sheet, strip	1	DTD 390	Sheet, strip	1
BS L 102	Bar, extrusions	1	DTD 423	Bar, extrusions	1
BS L 111	Bar, extrusions	1	DTD 423	Forgings	1
			DTD 603	Sheet, strip	1
BS S 2	Bar	2	DTD 610	Sheet, strip	1
BS S 3	Sheet, strip	2	DTD 5006	Wire	3
BS S 6	Bar	2	DTD 5014	Bar, extrusions	1
BS S 6	Forgings	2	DTD 5016	Tube	3
BS S 11	Bar	2	DTD 5046	Sheet, strip	3
BS S 11	Forgings	2	DTD 5066	Bar	3
BS S 94	Bar	2	DTD 5066	Forgings	3
BS S 94	Forgings	2	DTD 5124	Bar for fasteners	1
BS S 95	Bar	2	DTD 5638	Bar for fasteners	4
BS S 95	Forgings	2	DTD 5639	Bar for fasteners	4
BS S 96	Bar	2			
BS S 96	Forgings	2			
BS S 110	Bar	3			
BS S 110	Forgings	3			
BS S 114	Bar	2			
BS S 114	Forgings	2			
BS S 511	Sheet, strip	2			
BS S 520	Sheet, strip	3			
BS S 521	Sheet, strip	3			
BS T 4	Tube	1			
BS T 35	Tube	2			
BS T 50	Tube	2			

5. TABLES OF REFERENCED MATERIALS & ALTERNATIVES

TABLE 1 ALUMINIUM ALLOYS

MATERIAL REFERENCED ON AGS / AS DRAWING					ALTERNATIVE MATERIALS		
SPECIFICATION	STATUS	ALLOY DESIGNATION ¹	TEMPER ²	PRODUCT FORM	SPECIFICATION / STANDARD	RESTRICTIONS	
DTD 130	Withdrawn	2031	T6 / T651	Extruded bar & section	BS L 83	BS L 83 has been withdrawn, however, existing stock may be used	
			T6	Forgings			
DTD 133	Withdrawn	-	T5	Castings	BS L 51 ³	BS L 51 has been withdrawn, however, existing stock may be used (BS L 51 chill castings f_i is 23% higher than that of DTD 133)	
DTD 213	Withdrawn	3103	Cold rolled	Sheet & strip	BS L 59	BS L 59 has been withdrawn, however, existing stock may be used. No restrictions (f_i reduced by 5.8%, lower % elongation); no bend test specified)	
					EN 4004		
DTD 298	Withdrawn	-	T4	Castings	BS L 154	None	
DTD 304	Withdrawn	-	T6	Castings	BS L 155	None	
DTD 310	Withdrawn	5251	O	Tube	BS L 56 ⁴	None (BS L 56 f_i is 15% higher than that expected for DTD 310)	
					BS L 168 ⁵		
DTD 364	Withdrawn	2014A	T6 / T6511	Extruded bar & section	EN 2384 ⁵	Limited to material 10 mm < a or D ≤ 75 mm	
					EN 2635 (PCGC) ⁵	Limited to material 10 mm < a or D ≤ 75 mm (preferred)	
					BS L 77	None	
DTD 390	Withdrawn	2014A	T4	Clad sheet & strip	prEN 2382	None	
					BS L 164	None	
					EN 2088	None	

TABLE 1 (contd.) ALUMINIUM ALLOYS

MATERIAL REFERENCED ON AGS / AS DRAWING					ALTERNATIVE MATERIALS	
SPECIFICATION	STATUS	ALLOY DESIGNATION ¹	TEMPER ²	PRODUCT FORM	SPECIFICATION / STANDARD	RESTRICTIONS
DTD 423	Withdrawn	2014A	T6	Hexagonal bar for nuts, couplings & hollow machined parts	BS L 85	BS L 85 has been withdrawn, however, existing stock may be used (not to be used for material where $9.5 \text{ mm} < a \text{ or } D \leq 20 \text{ mm}$)
				Forgings		
DTD 603	Withdrawn	2014A	T4	Sheet & strip	EN 2395	None
DTD 610	Withdrawn	2014A	T4	Clad sheet & strip	BS L 156	BS L 156 has been withdrawn, however, existing stock may be used
					EN 2088	None
DTD 5014	Withdrawn	2618A	T6511	Extruded bar & section	EN 3553 ⁵	None
					BS L 170	None
DTD 5124	Withdrawn	7075	T6 / T6511	Extruded bar & section	prEN 2394	Not to be used for material $a \text{ or } D > 10 \text{ mm}$
					prEN 2631(PCGC)	Not to be used for material $a \text{ or } D > 10 \text{ mm}$ (preferred)
BS L 1	Withdrawn	2014A	T451	Extruded bar & section	BS L 102 ⁵	Only use where $a \text{ or } D \leq 150 \text{ mm}$
					EN 2100 ⁵	Only use where $2.5 \text{ mm} < a \text{ or } D \leq 100 \text{ mm}$
					prEN 2634(PCGC) ⁵	Only use where $2.5 < a \text{ or } D \leq 150 \text{ mm}$ (preferred due to PCGC)
BS L 3	Withdrawn	2014A	T6 / T62	Sheet & strip	EN 2395 ⁵	None
					BS L 156 ⁵	BS L 156 has been withdrawn, however, existing stock may be used

TABLE 1 (contd.) ALUMINIUM ALLOYS

MATERIAL REFERENCED ON AGS / AS DRAWING						ALTERNATIVE MATERIALS	
SPECIFICATION	STATUS	ALLOY DESIGNATION ¹	TEMPER ²	PRODUCT FORM	SPECIFICATION / STANDARD	RESTRICTIONS	
BS L 38	Withdrawn	2014A	T4 / T42	Clad sheet & strip	BS L 164 ⁵ EN 2088 ⁵	None	
BS L 39	Withdrawn	2014A	T4 / T4511	Extruded bar & section	BS L 102 ⁵ EN 2100 ⁵ prEN 2634(PCGC) ⁵	None Limited to material where a or $D \leq 150$ mm None (preferred)	
BS L 62	Withdrawn	2014A	T3	Tube	BS L 105 prEN 3346 BS L 102 ⁵	None None (preferred) None	
BS L 64	Withdrawn	2014A	T4 / T4511	Extruded bar & section	EN 2100 ⁵ prEN 2634(PCGC) ⁵ EN 2384	Limited to material where a or $D > 2.5$ mm Limited to material where a or $D > 2.5$ mm (preferred) Limited to material where 2.5 mm $< a$ or $D \leq 20$ mm or 25 mm $< a$ or $D \leq 150$ mm	
BS L 65	Withdrawn	2014A	T6 / T6511	Extruded bar & section	BS L 168 EN 2384 EN 2635(PCGC)	Limited to material where 2.5 mm $< a$ or $D \leq 20$ mm or 25 mm $< a$ or $D \leq 200$ mm Limited to material where 2.5 mm $< a$ or $D \leq 150$ mm Limited to material where 2.5 mm $< a$ or $D \leq 20$ mm or 25 mm $< a$ or $D \leq 150$ mm (preferred)	
BS L 70	Withdrawn	2014A	T6 / T62	Sheet & strip	EN 2395 BS L 156	None BS L 156 has been withdrawn, however, existing stock may be used	

TABLE 1 (contd.) ALUMINIUM ALLOYS

MATERIAL REFERENCED ON AGS / AS DRAWING				ALTERNATIVE MATERIALS		
SPECIFICATION	STATUS	ALLOY DESIGNATION ¹	TEMPER ²	PRODUCT FORM	SPECIFICATION / STANDARD	RESTRICTIONS
BS L 102	Obsolescent	2014A	T4 / T4511	Extruded bar & section	EN 2100	Limited to material where 2.5 mm < a or D ≤ 20 mm or 25 mm < a or D ≤ 200 mm
					prEN 2634(PCGC)	Limited to material where 2.5 mm < a or D ≤ 20 mm or 25 mm < a or D ≤ 200 mm (preferred)
BS L 111	Obsolescent	6082	T6 / T6511	Extruded bar & section	prEN 4273	None
					prEN 4274(PCGC)	None (preferred)
BS T 4	Withdrawn	2014A	T3	Tube	BS L 105	None
					prEN 3346	None (preferred)

¹ International registration designation – The Aluminum Association, 1525 Wilson Boulevard, Arlington, VA 22209, USA.

² In accordance with EN 515 (Wrought products) or EN 1706 (Cast products).

³ The f_t and / or t_2 of the alternative standard is > 20% and ≤ 25% higher than the standard called up.

⁴ The f_t and / or t_2 of the alternative standard is > 10% and ≤ 20% higher than the standard called up.

⁵ The f_t and / or t_2 of the alternative standard is > 2% and ≤ 10% higher than the standard called up.

TABLE 2 NON-CORROSION RESISTING STEELS

MATERIAL REFERENCED ON AGS / AS DRAWING				ALTERNATIVE MATERIALS		
SPECIFICATION	STATUS	ALLOY DESIGNATION	TEMPER	PRODUCT FORM	SPECIFICATION / STANDARD	RESTRICTIONS
DTD 124	Withdrawn	Carbon steel	Hardened & tempered	Sheet & strip	BS S 514	None
			Softened		BS S 515	None
DTD 187	Withdrawn	High carbon spring steel	Hardened & tempered	Strip	BS S 513	None
DTD 188	Withdrawn	Manganese-molybdenum steel	Hardened & tempered	Bar	BS S 154 ¹	None
					prEN 3519 ¹	Limited to material where $D_e < 100$ mm
				Forging	BS S 114 ¹	BS S 114 has been withdrawn, however, existing stock may be used
					BS S 154 ¹	None
BS S 2	Withdrawn	Alloy steel	Hardened & tempered	Bar	prEN 2455 ¹	Limited to material where $D_e < 100$ mm
					BS S 114 ¹	BS S 114 has been withdrawn, however, existing stock may be used
BS S 3	Withdrawn	Carbon-manganese steel	Softened	Sheet & strip	S 154 ¹	None
					prEN 3519 ¹	Limited to material where $D_e < 100$ mm
BS S 6	Withdrawn	"40" Carbon steel	Normalised	Bar & forging	BS S 510	None
					BS S 93	Limited to material where $D_e \leq 4"$ [101.6 mm]
BS S 11	Withdrawn	3% Nickel-chromium-molybdenum steel	Hardened & tempered	Bar	BS S 154 ¹	None
					prEN 3519 ¹	Limited to material where $D_e < 100$ mm
				Forging	BS S 154 ¹	None
					prEN 2455 ¹	Limited to material where $D_e < 100$ mm

TABLE 2 (contd.) NON-CORROSION RESISTING STEELS

MATERIAL REFERENCED ON AGS / AS DRAWING					ALTERNATIVE MATERIALS	
SPECIFICATION	STATUS	ALLOY DESIGNATION	TEMPER	PRODUCT FORM	SPECIFICATION / STANDARD	RESTRICTIONS
BS S 94	Withdrawn	Manganese-nickel steel	Hardened & tempered	Bar	BS S 154 ¹	None
				Forging	prEN 3519 ¹	Limited to material where $D_e < 100$ mm
BS S 95	Withdrawn	1½% Nickel-chromium-molybdenum steel	Hardened & tempered	Bar	BS S 154 ¹	None
				Forging	prEN 2455 ¹	Limited to material where $D_e < 100$ mm
BS S 96	Withdrawn	2½% Nickel-chromium-molybdenum steel	Hardened & tempered	Bar	BS S 154	None
				Forging	prEN 3519	Limited to material where $D_e < 100$ mm
BS S 114	Withdrawn	Manganese-molybdenum steel	Hardened & tempered	Bar	BS S 154	None
				Forging	prEN 2455	Limited to material where $D_e < 100$ mm
BS S 511	Withdrawn	Low carbon steel	Hardened & tempered	Bar	BS S 154 ²	None
				Forging	prEN 3519 ²	Limited to material where $D_e < 100$ mm
BS T 35	Withdrawn	Carbon-manganese steel	Hardened & tempered	Bar	BS S 154 ²	None
				Tube	prEN 2455 ²	Limited to material where $D_e < 100$ mm
BS S 511	Withdrawn	Low carbon steel	Hardened & tempered	Sheet & strip	EN 10130 – DC03	None (although t_2 reduced by 3.6%)
					EN 10130 – DC04	None (although t_2 reduced by 3.6%)
BS T 35	Withdrawn	Carbon-manganese steel	Hardened & tempered		EN 10130 – DC06	None (although t_2 reduced by 3.6%)
					BS T 64	BS T 64 has been withdrawn, however, existing stock may be used

TABLE 2 (contd.) NON-CORROSION RESISTING STEELS

MATERIAL REFERENCED ON AGS / AS DRAWING				ALTERNATIVE MATERIALS		
SPECIFICATION	STATUS	ALLOY DESIGNATION	TEMPER	PRODUCT FORM	SPECIFICATION / STANDARD	RESTRICTIONS
BS T 50	Withdrawn	Chromium-molybdenum steel	Hardened & tempered	Tube	BS T 76	None
					BS T 45	BS T 45 has been withdrawn, however, existing stock may be used provided that either: (a) each individual length of BS T 45 tube is sampled and tested and shown to meet the mechanical property requirements of both BS T 50 / BS T 76 and BS T 45, or (b) BS T 45 tube has been manufactured to comply with the mechanical property requirements of both BS T 45 and BS T 50 / BS T 76 then those tubes may be used as a substitute for BS T 50 tube. (As permitted by the CAA).

¹ The f_t and / or t_2 of the alternative standard is > 2% and ≤ 10% higher than the standard called up.

² The f_t of the alternative standard is 3.6% higher than that of the standard called up.

TABLE 3 CORROSION RESISTING STEELS

MATERIAL REFERENCED ON AGS / AS DRAWING					ALTERNATIVE MATERIALS		
SPECIFICATION	STATUS	ALLOY DESIGNATION	TEMPER	PRODUCT FORM	SPECIFICATION / STANDARD	RESTRICTIONS	
DTD 166	Withdrawn	18-10 Chromium-nickel steel	Cold rolled	Sheet & strip	BS S 524	None	
					BS S 525	None	
DTD 171	Withdrawn	18-10 Chromium-nickel steel	Softened	Sheet & strip	EN 3816	Material limited to $a \leq 3$ mm	
					BS S 526	None	
DTD 5006	Withdrawn	18-10 Chromium-nickel steel	Cold drawn	Wire	BS S 527	None	
					BS S 205	None, providing manufacturer meets spring characteristics of the Standard Part	
DTD 5016	Withdrawn	18-10 Chromium-nickel steel	Softened	Tube	BS T 72	None (preferred)	
					BS T 73	None	
DTD 5046	Withdrawn	12% Chromium-molybdenum-vanadium steel	Hardened & tempered	Sheet & strip	BS S 538	None	
DTD 5066	Withdrawn	12% Chromium-nickel-molybdenum steel (Jethete M152)	Hardened & tempered	Bar	BS S 159	None	
				Forgings			
BS S 110	Withdrawn	18-10 Chromium-nickel steel	Softened	Bar	BS S 129	None	
				Forgings	BS S 130	None (Preferred)	
					BS S 129	None	
					BS S 130	None (Preferred)	

TABLE 3 (contd.) CORROSION RESISTING STEELS

MATERIAL REFERENCED ON AGS / AS DRAWING					ALTERNATIVE MATERIALS	
SPECIFICATION	STATUS	ALLOY DESIGNATION	TEMPER	PRODUCT FORM	SPECIFICATION / STANDARD	RESTRICTIONS
BS S 520	Withdrawn	18-10 Chromium- nickel steel	Cold rolled or cold rolled & tempered	Sheet & strip	BS S 524	None
					BS S 525	None
					EN 3816	None
BS S 521	Withdrawn	18-10 Chromium- nickel steel	Softened	Sheet & strip	BS S 526	None
					BS S 527	None

TABLE 4 HEAT RESISTING ALLOYS

SPECIFICATION	MATERIAL REFERENCED ON AGS / AS DRAWING					ALTERNATIVE MATERIALS	
	STATUS	ALLOY DESIGNATION	TEMPER	PRODUCT FORM	SPECIFICATION / STANDARD	RESTRICTIONS	
DTD 5638	Withdrawn	Iron-nickel-chromium-molybdenum-niobium+tantalum steel	Solution treated & precipitated	Bar & wire	prEN 2952	None	
					prEN 2961	None	
DTD 5639	Withdrawn	Nickel-chromium-cobalt-molybdenum-titanium-aluminium alloy	Solution treated & precipitated	Bar & wire	prEN 2959	None	
					prEN 2960	Limited to $D \leq 30$ mm.	
					prEN 3220	Limited to $D \leq 30$ mm.	
BS HR 650	Partially superseded	Nickel-chromium-titanium-molybdenum heat-resisting steel	Solution treated & precipitated	Bar & wire	EN 2398	Limited to bars $D \leq 25$ mm for machined bolts	
					EN 2399	Limited to bars $D \leq 25$ mm for forged bolts	

TABLE 5 COPPER ALLOYS

SPECIFICATION	MATERIAL REFERENCED ON AGS / AS DRAWING					ALTERNATIVE MATERIALS				
	STATUS	ALLOY DESIGNATION	TEMPER	PRODUCT FORM	SPECIFICATION / STANDARD	ALLOY DESIGNATION	TEMPER	RESTRICTIONS		
DTD 253	Withdrawn	"Tungum"	Annealed	Tube	BS B 27 ¹	-	-	None		
DTD 323	Withdrawn	"Tungum"	Annealed	Tube	BS B 27 ¹	-	-	None		
BS 265	Withdrawn	CZ108	O	Sheet, strip & foil	EN 1652	CW508L	R300	None		
			¼ H				None, providing the spring characteristics of the Standard Part are met.			
			½ H							
			H							
BS 885	Withdrawn	CZ105	O	Tube	EN 12451	CW707R	R340	None		
			O	Tube	EN 12449	CW702R	R340	None		
BS 899	Withdrawn	C101	O	Sheet, strip & foil	EN 1652	CW004A	R220	None		
BS 920	Withdrawn	Naval brass	F	Die castings	EN 1982	GP	F	Strength values given in EN 1982 are for information only, but exceed those of BS 920.		
BS 932	Withdrawn	Brass	F	Gravity die castings	EN 1982	CB767S	F	None		
					EN 1982	CC767S	F	None		

TABLE 5 (contd.) COPPER ALLOYS

SPECIFICATION	MATERIAL REFERENCED ON AGS / AS DRAWING				ALTERNATIVE MATERIALS			
	STATUS	ALLOY DESIGNATION	TEMPER	PRODUCT FORM	SPECIFICATION / STANDARD	ALLOY DESIGNATION	TEMPER	RESTRICTIONS
BS 2870		C101	O		EN 1652	CW004A	R220	None
			M				R240	None
			½ H				R290	Slightly lower strength
			H					
	Withdrawn	C103	O	Sheet, strip & foil		R220		None
			M			R240	None	
			½ H			R290	Slightly lower strength	
			H					
		C104	O			R220		None
			M			R240	None	
			½ H			R290	Slightly lower strength	
			H					
	C106	O		R220		None		
		M		R240	None			
		½ H		R290	Slightly lower strength			
		H						
BS 2872	Withdrawn	CZ122	M	Forgings	EN 12420	CW617N	H080	None

¹ The f_t of the alternative standard is 3.1% higher than that of the standard called up.