B.S. No.

SPARKING PLUGS

45 : 1952 - Sparking Plugs

SPLINES AND SERRATIONS

2059 : 1953 - Straight Sided
3550 : 1963 - Involute Splines

SPRINGS

1726 : 1964 - Guide to the Method of Specifying Helical Compression Springs.

SPRING RETAINING RINGS

3673 Part 1 : 1963 - Carbon Steel Circlips

STEEL

3706 : 1964 - Mild Steel for General Engineering

Bars

3141 Part 1 : 1959 - Wrought Steels: Master Schedule of: (Carbon Steels)
1407 : 1959 - High Carbon Bright Steel (Silver Steel)
1423 : 1948 - High Carbon Oil Hardening Steel

Parts
970 : 1955 - Wrought Steels
971 : 1950 - Commentary on B.S.970
2094 Part 3 : 1954 - Glossary of Terms - Hot Rolled
2094 Part 5 : 1954 - " " " - Bright Bar

Castings

3100 : 1957 - Castings for General Engineering

Forgings

3141 Part 1 : 1959 - Wrought Steels : Master Schedule of: (Carbon Steels)
970 : 1955 - Wrought Steel
971 : 1950 - Commentary on B.S. 970
2094 Part 6 : 1954 - Glossary of Terms

Pipe Fittings

2051 Part 3 : 1954 - Compression Fittings
2051 Part 4 : 1954 - Nipple Fittings for Brazing

Sheet and Strip

3141 Part 1 : 1959 - Wrought Steels : Master Schedule of: (Carbon Steels)

Part

B.S. No.

STEEL
Sheet and Strip(Cont)

1822	: 1952	-	Nickel Clad Steel Plate
2094 Part 4	: 1954	-	Glossary of Terms
STA	: 23	-	Terneplate (Tinterne) Quality

Structural

2994	: 1958	-	Cold Rolled Sections
4	: 1962	-	Structural Steel Sections.

Tubes

1775	: 1964	-	Mechanical and General Purposes
980	: 1964	-	Automobile Purposes
2094 Part 8	: 1956	-	Glossary of Terms

Wire

1429	: 1948	-	Annealed for Oil Hardened and Tempered Springs
1408	: 1947	-	Hard Drawn for Springs
1052	: 1942	-	Mild Steel
2803	: 1956	-	Oil Hardened and Tempered for Springs
1554	: 1949	-	Rust, Acid and Heat Resisting.
2056	: 1953	-	" " " " " for Springs
2094 Part 5	: 1954	-	Glossary of Terms
3111	: 1959	-	Cold Forged High Tensile Bolts Etc.

STUDS

2693	: 1956	-	Screwed Studs - B.S.W.,B.S.F.,U.N.C.,U.N.F. and No. 2 and No. 4 B.A.

SURFACE TEXTURE

1134	: 1961	-	The Assessment of Surface Texture
2634	: 1960	-	Roughness Comparison Specimens.

TESTS ON MATERIALS

1349	: 1947	-	Impact Test for Grey Iron Castings
1639	: 1950	-	Notes on Simple Bend Test
18	: 1962	-	Tensile Testing of Metals
131 Part 1	: 1961	-	Izod Impact Test on Metals
131 Part 2	: 1959	-	Charpy V-Notch Impact Test.

TOLERANCES

1718	: 1951	-	Tolerances for Steel Drop Forgings and Upset Forgings.
1916 Part 3	: 1963	-	Limits and fit for Engineering
1916C Data Sheet		-	Primary Selection of Fits
1916D Data Sheet		-	Secondary Selection of Fits.

LIST OF BRITISH STANDARDS Cont'd

B.S. No.

UNDERCUTS

1936 : 1952 - Undercuts and Runouts for Screw Threads

V-BELT

1440 : 1962 - Endless V-Belt Drives

WASHERS - SEE ALSO BOLTS AND SCREWS, THURST WASHERS - SEE BUSHES

1802 : 1951 - Steel Spring Washers
3410 : 1961 - Metal Washers for General Engineering Purposes
2061 : 1953 - Phosphor Bronze Spring Washers

WELDING

1724 : 1959 - Bronze Welding
1856 : 1952 - General Requirements for Metal-Arc Welding
938 : 1962 - General Requirements for Metal-Arc Welding - Tubes.
2937 : 1957 - General Requirements for Seam Welding
1140 : 1957 - General Requirements for Spot Welding
693 : 1960 - Oxy-Acetylene Welding in Mild Steel
2996 : 1958 - Projection Welding.
499 : 1952 - Glossary of Terms
3451 : 1962 - Testing Fusion Welds in Aluminium and Alloys
639 : 1964 - Covered Electrodes for Metal Arc Welding.

WING NUTS

856 : 1939 - Wing Nuts - B.S.W.,B.S.F. and B.A.

ZINC

1004 : 1955 - Zinc Alloys for Die-Casting
CP3001 : 1955 - Alloy Pressure Die Castings.

British Standard Books held by Technical Library

B.S.No.	Issue Date	Title
649	1958	Diesel Engines for General Purposes
661	1955	Glossary of Acoustical terms
765	1961	Internal Combustion Engines Carburettor Type.
857 Part 1 & 2	1964	Safety Glass for Land Transport
968	1962	The Economics of Structural Members in High Strength Steel.
1568	1960	Magnetic Tape Sound Recording and Reproduction.
1586	1964	Open Type condensing Units for Refrigeration.
1610	1958	Verification of Testing Machines
1701	1950	Air Filters for Internal Combustion Engines and Compressors
1832	1958	Oil Resistant Compressed Asbestos Fibre Jointing
1991 Part 1	1954	Letter Symbols, Signs and Abbreviations
2837	1957	Lifting Attachments for Packing Cases.
3254	1960	Seat Belt Assemblies for Motor Vehicles
3417 Part 2	1964	Agricultural Power Take Off Shafts and Guards
3425	1961	Measurement of Noise emitted by Motor Vehicles.

34. STRAIGHTENING OF COMPONENTS.

THE FOLLOWING IS A COPY OF A MEMORANDUM RECEIVED FROM MR. W. R. BOYLE IN CONNECTION WITH THE STRAIGHTENING OF COMPONENTS SUCH AS CRANKSHAFTS, CAMSHAFTS, GEARBOX MAINSHAFTS, ETC.

"THE MAXIMUM DEFLECTION APPLIED TO THESE COMPONENTS IN A STRAIGHTENING OPERATION SHOULD NOT BE LEFT TO THE DESCRETION OF PRODUCTION. IN FUTURE, ALL HIGHLY STRESSED PARTS SUBJECT TO THIS OPERATION SHOULD HAVE A LIMIT TO THE MAXIMUM ALLOWABLE DEFLECTION PLACED ON THE DRAWING.

I APPRECIATE THAT IT WOULD BE DIFFICULT TO ARRIVE AT THIS LIMIT BY CALCULATION, BUT I IMAGINE THAT THERE WOULD BE NO DIFFICULTY IN ARRIVING AT A SENSIBLE ANSWER AFTER A DISCUSSION WITH INSPECTION OR PRODUCTION."

WILL ALL DRAUGHTSMEN PLEASE ENSURE THAT THE APPROPRIATE NOTE TOGETHER WITH A LIMIT IS ADDED TO DRAWINGS AFFECTED BY THE ABOVE REMARKS.

NOTES ON THE SHEAR STRENGTH OF STEEL.

EXTRACT FROM MEMORANDUM ISSUED BY MR. S. HESLOP ON 7TH JANUARY 1957.

A KNOWLEDGE OF THE SHEAR STRENGTH OF STEEL IS IMPORTANT IN CONNECTION WITH SHEAR PINS, DRIVING PINS, AND SIMILAR PIECES OF MECHANISM. INFORMATION ON THE SHEAR STRENGTH OF STEELS APPEAR TO BE LACKING AND ACCORDINGLY A SHORT PROGRAMME OF INVESTIGATION HAS BEEN CARRIED OUT ON THE DETERMINATION OF THE DOUBLE SHEAR STRENGTH OF VARIOUS STEELS USUALLY EMPLOYED COMMERCIALLY IN THIS TYPE OF APPLICATION.

THE RESULTS OF THESE INVESTIGATIONS SHOW THAT THERE IS NO GENERAL RELATIONSHIP BETWEEN THE YIELD POINT OF THE STEEL AND ITS STRENGTH IN DOUBLE SHEAR NOR DID THERE APPEAR TO BE ANY RELATIONSHIP BETWEEN THE DUCTILITY OF THE MATERIAL AS MEASURED BY THE ELONGATION TEST AND THE DOUBLE SHEAR STRENGTH.

THE RESULTS SHOWING THE BEST FORM OF AGREEMENT WERE THE MAXIMUM STRENGTH - DOUBLE SHEAR STRENGTH VALUES AND THESE ARE GIVEN IN TABLE 18 BELOW.

MATERIAL SPEC.	MATERIAL CONDITION	MAXIMUM STRENGTH TONS/SQ. IN.	DOUBLE SHEAR STRENGTH TONS/SQ IN.	RATIO DSS/MS
SILVER STEEL	SPHEROIDISED.	38 · 48	28 · 38	· 74
X1114	COLD DRAWN.	36 · 56	25 · 40	·69
1030	HARDENED & TEMPERED	40 · 32	27 · 16	·67
X 1130	HEAT TREATED & COLD DRAWN	52 · 24	35 · 62	·68
1035	HARDENED & TEMPERED	54 · 88	33 · 05	·60
1060	HARDENED & TEMPERED	65 · 34	40 · 43	·62
1034	HARDENED &	63 · 08	36 · 96	·60

NOTES ON THE SHEAR STRENGTH OF STEEL CONT'D.

IN GENERAL TERMS THE DOUBLE SHEAR STRENGTH OF A STEEL IS APPROXIMATELY RELATED TO ITS TENSILE STRENGTH. TO OBTAIN A MATERIAL HAVING A DOUBLE SHEAR STRENGTH NOT LESS THAN A CERTAIN VALUE, A STEEL HAVING A MAXIMUM STRENGTH IN ACCORDANCE WITH THE RATIO GIVEN, SHOULD BE SELECTED.

THERE IS NO GENERAL RELATIONSHIP BETWEEN THE YIELD POINT AND DOUBLE SHEAR STRENGTH, NOR THE ELONGATION VALUE AND THE DOUBLE SHEAR STRENGTH.

THE DOUBLE SHEAR STRENGTH / MAXIMUM STRENGTH RATIOS FOR STEELS LIKELY TO BE USED AS SHEAR PINS RANGES FROM 0·60 TO 0·70, WITH AN AVERAGE VALUE OF 0·65. IT IS INTERESTING TO NOTE THAT THE HIGHEST DSS/MS RATIO, (I.E. 0·74), OCCURS WITH SILVER STEEL IN THE SPHEROIDISED CONDITION, AND THIS IS THE MATERIAL FREQUENTLY USED AS SHEAR PINS AND THE LIKE. IT SHOULD BE NOTED HOWEVER, THAT THE ACTUAL DOUBLE SHEAR VALUE FOR SILVER STEEL IN THE SPHEROIDISED CONDITION IS NEAR THE BOTTOM OF THE LIST

THE DOUBLE SHEAR STRENGTH OF MATERIAL FOR USE AS SHEAR PINS IN THE SIZES MOST APPROPRIATE MAY BE OBTAINED FROM THE FORMULA :-

APPROXIMATE DOUBLE SHEAR STRENGTH } = MAXIMUM STRENGTH x 0·65 ”

DAMPERS (SHOCK ABSORBERS)

THE FOLLOWING IS AN EXTRACT FROM MR. P.M. WILKS'S MEMORANDUM OF THE 16TH, JUNE, 1959 IN CONNECTION WITH A DISCUSSION ON THE PROPOSED STANDARDISATION OF DAMPERS BY THE S.M.M.T.

"IT WAS AGREED TO STANDARDISE FOR THE WHOLE ROVER RANGE ON A 4 INCH STROKE AND ON 9 AND 110 R.P.M (NOMINAL). THIS DOES IN FACT GET AS NEAR TO THE S.M.MT RECOMMENDATIONS FOR SPEED AS CAN BE ACHIEVED USING OUR PRESENT EQUIPMENT. IT WAS AGREED THAT ALL DAMPER DRAWINGS SHOULD INCORPORATE THE FOLLOWING INFORMATION :-

a) SPECIFIED LOADS TOGETHER WITH TOLERANCES OF PLUS OR MINUS 10% FOR BLOW OFF, AND PLUS OR MINUS 20% FOR LEAK.

b) A WORK DIAGRAM WHICH WOULD ACT AS A GUIDE FOR INSPECTION PURPOSES.

c) THE DETAILS OF THE VALVE CODING FOR REFERENCE PURPOSES."

TO SATISFY ITEMS (a) AND (c) THE FOLLOWING INFORMATION MUST BE PUT ON ALL DRAWINGS OF DAMPERS

ROVER TEST MACHINE LOADINGS :-

REBOUND BLOW OFF	± 10 %
REBOUND LEAK	± 20 %
COMPRESSION LEAK	± 20 %
COMPRESSION BLOW OFF	± 10 %

VALVE CODING

REBOUND ORIFICE :	
INTAKE ORIFICE :	
COMPRESSION ORIFICE:	

TEST STROKE 4 INCHES

NOMINAL TEST SPEEDS : 9 & 110 CYCLES PER MIN

ADHESIVES.

"A REPORT HAS BEEN RECEIVED FROM SOLIHULL CHEMICAL LABORATORY ON THE SUITABILITY OF HOLDITE AND BOSTIK ADHESIVES FOR CERTAIN PURPOSES. THE ADHESIVES WERE USED BETWEEN THE SPECIFIED SURFACES AND SUBJECTED TO THE FOLLOWING TESTS:-

1. 72 HOURS AT 70° C DRY HEAT.
2. 72 HOURS AT 100° C DRY HEAT.
3. 336 HOURS IN THE HUMIDITY CABINET UNDER TROPICAL CONDITIONS OF TEMPERATURE AND HUMIDITY.

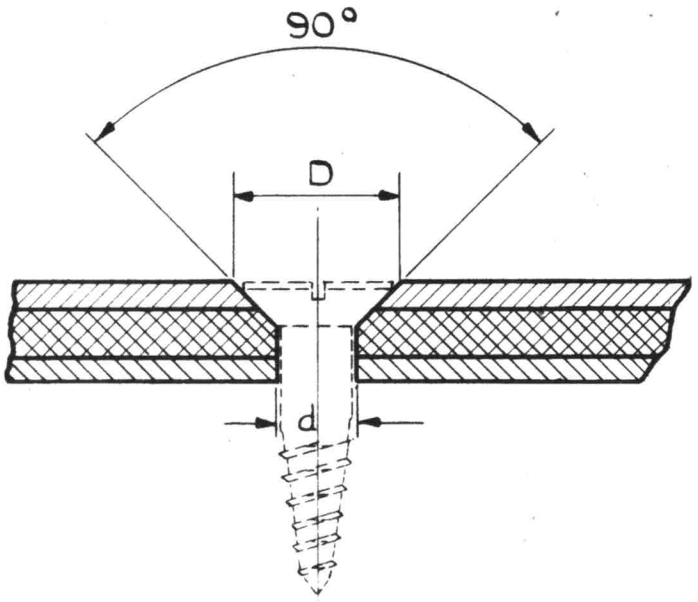
THE CONCLUSIONS OF THE TEST ARE QUOTED BELOW :-

THE TESTS WHICH SHOWED THE MOST SATISFACTORY BONDS FOR EACH JOINT WERE AS FOLLOWS :-

1. PHOSPHATED AND STOVED ALUMINIUM TO LATEX - BOSTIK 1430.
2. PHOSPHATED AND STOVED MILD STEEL TO LATEX - BOSTIK 1430.
3. LATEX TO LATEX - BOSCOTEX 41S
4. LATEX TO POLYARETHANE - BOSCOTEX 41S"

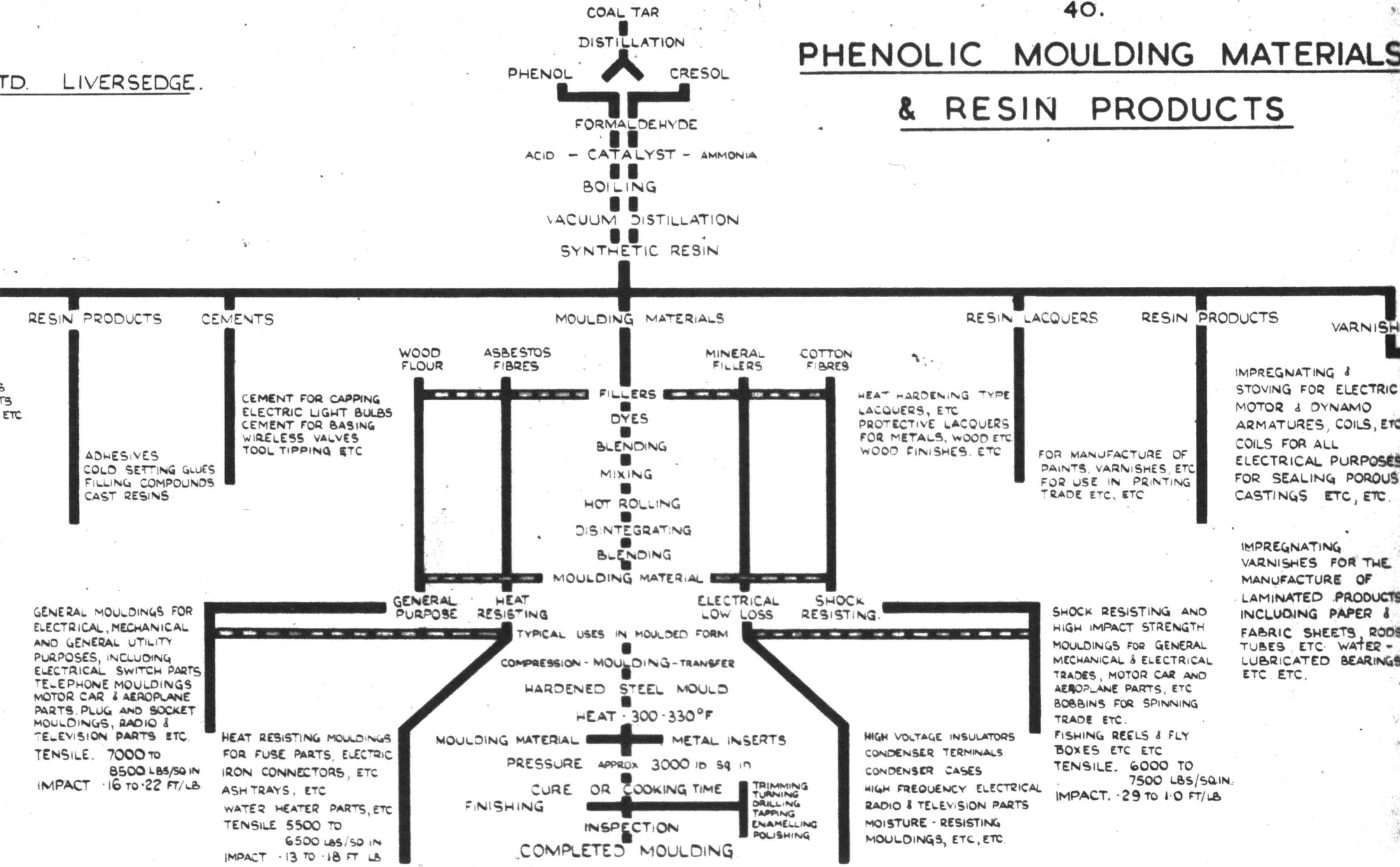
THE ABOVE IS A COPY OF A MEMORANDUM DATED

WOODSCREWS – DIAMETER OF HOLES AND COUNTERSINKING.



SCREW GAUGE	D				d		DIAMETER OF HOLE FOR C'SUNK HEAD WHERE COUNTERSINKING IS UNDESIRABLE		DIAMETER OF HOLE TO SUIT THREAD	
	DIAMETER OF COUNTERSINK				DIA. OF HOLE TO SUIT SHANK					
	WOOD		METAL							
	FRAC.	DEC.	FRAC.	DEC.	FRAC.	DEC.	FRAC.	DEC.	FRAC.	DEC.
4	7/32	·218	15/64	·234	1/8	·125	5/32	·156	5/64	·078
6	17/64	·265	19/64	296	5/32	·156	7/32	·218	3/32	·093
8	21/64	·328	11/32	·343	11/64	·171	17/64	·265	7/64	·109
10	25/64	·390	27/64	·421	13/64	·203	21/64	·328	1/8	·125
12	7/16	·437	15/32	·468	15/64	·234	3/8	·375	9/64	·140
14	1/2	·500	17/32	·531	17/64	·265	7/16	·437	5/32	·156

39. PHYSICAL PROPERTIES OF NATURAL AND SYNTHETIC RUBBER.

TD. LIVERSEDGE.

PHENOLIC MOULDING MATERIALS & RESIN PRODUCTS