

Specification for

Crinkle washers —

For general engineering purposes —

Metric series

Confirmed
January 2012

Co-operating organizations

The Mechanical Engineering Industry Standards Committee, under whose supervision this British Standard was prepared, consists of representatives from the following Government departments and scientific and industrial organizations:

Associated Offices' Technical Committee	Institute of Marine Engineers
Association of Consulting Engineers	Institution of Civil Engineers
Association of Mining Electrical and Mechanical Engineers	Institution of Gas Engineers
Board of Trade	Institution of Heating and Ventilating Engineers
British Chemical Plant Manufacturers' Association	Institution of Mechanical Engineers*
British Compressed Air Society	Institution of Mechanical Engineers (Automobile Division)
British Electrical and Allied Manufacturers' Association*	Institution of Production Engineers
British Gear Manufacturers' Association	Locomotive and Allied Manufacturers' Association of Great Britain
British Internal Combustion Engine Manufacturers' Association	London Transport Board
British Mechanical Engineering Confederation*	Machine Tool Trades Association
British Pump Manufacturers' Association	Ministry of Defence*
British Steel Industry	Ministry of Defence, Army Department
Crown Agents for Oversea Governments and Administrations	Ministry of Power
Department of Employment and Productivity (H.M. Factory Inspectorate)	Ministry of Public Building and Works
Electricity Council, the Central Electricity Generating Board and the Area Boards in England and Wales	Ministry of Technology*
Engineering Equipment Users' Association	Ministry of Technology — National Engineering Laboratory
Gas Council	Ministry of Transport
	National Coal Board
	National Physical Laboratory (Ministry of Technology)
	Royal Institute of British Architects.

The Government departments and scientific and industrial organizations marked with an asterisk in the above list, together with the following, were directly represented on the committee entrusted with the preparation of this British Standard:

Copper Development Association	Society of Motor Manufacturers and Traders Ltd.
Institute of Iron and Steel Wire Manufacturers	Spring Research Association
Ministry of Technology (Aviation)	Telecommunication Engineering and Manufacturing Association
Radio and Electronic Manufacturers Federation	

This British Standard, having been approved by the Mechanical Engineering Industry Standards Committee, was published under the authority of the Executive Board on 15 May 1969

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Foreword

In order to keep abreast of progress in the industries concerned, British Standards are subject to periodical review. Suggestions for improvements will be recorded and in due course brought to the notice of the committees charged with the revision of the standards to which they refer.

A complete list of British Standards, numbering over 5000, fully indexed and with a note of the contents of each, will be found in the British Standards Yearbook. The BS Yearbook may be consulted in many public libraries and similar institutions.

This standard makes reference to the following British Standards together with those listed in Appendix B:

BS 21, *Pipe threads.*

BS 1449, *Steel plate, sheet and strip. Part 4. Stainless and heat resisting plate, sheet and strip.*

BS 1580, *Unified screw threads.*

BS 1706, *Electroplated coatings of cadmium and zinc on iron and steel.*

BS 2870, *Rolled copper and copper alloys. Sheet, strip and foil.*

BS 3643, *ISO metric screw threads.*

BS 9001, *Sampling procedures and tables for inspection by attributes for electronic parts of assessed quality.*

This British Standard Specification has been prepared under the authority of the Mechanical Engineering Industry Standards Committee as a result of the decision taken to adopt the ISO metric screw thread system in the United Kingdom (see Appendix A), and requests received from industry for the provision of a specification for metric series crinkle washers for general engineering purposes.

At present there are no ISO Recommendations, draft Recommendations or draft Proposals relating specifically to crinkle washers and consideration was initially given to preparing a British Standard specification based on German Standards DIN 128 and DIN 137, but the crinkle washers referred to in these metric specifications are curved in a different form, and are split. Accordingly it was decided to maintain the form of crinkle washer as illustrated in BS 3401, "Beryllium copper crinkle washers" which has three equi-spaced radial corrugations.

The use of this type of washer has been steadily increasing in recent years and it is widely used in a number of industries. It has accordingly been felt that it would be desirable to retain a single standard form of crinkle washer and it is hoped that the washers specified in this standard will meet most normal requirements, for use, where appropriate, with products manufactured to the metric threaded fastener standards listed in Appendix B.

As crinkle washers are currently manufactured in a variety of materials, it was felt desirable to leave the specification of material subject to agreement between the manufacturer and the purchaser. Recommendations have however been made with regard to the more commonly used copper alloy and stainless steel.

In the interests of variety reduction a rationalized selection of the first and second choice sizes only as given in BS 3643, "ISO metric screw threads", has been included in this standard, although account was taken of practical considerations and the envisaged usage of these products for general engineering purposes.