

Specification for Consumable Inserts



American Welding Society



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An American National Standard

Approved by the
American National Standards Institute
November 6, 2006

Specification for **Consumable Inserts**

3rd Edition

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Prepared by the
American Welding Society (AWS) A5 Committee on Filler Metals and Allied Materials

Under the Direction of the
AWS Technical Activities Committee

Approved by the
AWS Board of Directors

Abstract

Five classes (cross-sectional design) of consumable inserts of various chemical compositions are described. Each class is subdivided into two or three styles (based on the shape of the insert).

Topics include the chemical composition, general dimensional requirements, packaging, and application guidelines.



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Foreword

This foreword is not part of AWS A5.30/A5.30M:2007, *Specification for Consumable Inserts*, but is included for informational purposes only.

This document is the first of the A5.30 specifications which makes use of both U.S. Customary Units and the International System of Units (SI). The measurements are not exact equivalents, therefore each system must be used independently of the other, without combining values in any way. In selecting rational metric units, the *Metric Practice Guide for the Welding Industry* (AWS A1.1) is used where suitable. Tables and figures make use of both U.S. Customary and SI Units, which, with the application of the specified tolerances, provides for interchangeability of products in both the U.S. Customary and SI Units.

The current document is the third revision of the AWS document first issued in 1979. Its evolution took place as follows:

A5.30-79 *Specification for Consumable Inserts*

A5.30-97 *Specification for Consumable Inserts*

Specific topics include composition, style, profiles, dimensional tolerances, packaging, and package marking. Annex A suggests general areas of application.

Comments and suggestions for the improvement of this standard are welcome. They should be sent to the Secretary, AWS A5 Committee on Filler Metals and Allied Materials, American Welding Society, 550 N.W. LeJeune Road, Miami, FL 33126.

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Table of Contents

	Page No.
<i>Personnel</i>	v
<i>Foreword</i>	vii
<i>List of Tables</i>	x
<i>List of Figures</i>	x
1. Scope	1
2. Normative References	1
3. Classification	2
4. Acceptance	2
5. Certification	2
6. Rounding-Off Procedure	2
7. Summary of Tests	2
8. Retest	4
9. Chemical Analysis	8
10. Method of Manufacture	8
11. Standard Shapes, Styles, and Sizes	8
12. Finish and Uniformity	8
13. Standard Package Forms	8
14. Insert Identification	12
15. Packaging	12
16. Marking of Packages	12
Annex A (Informative)—Guide to AWS Specification for Consumable Inserts	13
Annex B (Informative)—Guidelines for the Preparation of Technical Inquiries	21
AWS Filler Metal Specifications by Material and Welding Process	23
AWS Filler Metal Specifications and Related Documents	25

List of Tables

Table	Page No.
1 Carbon Steel Compositions	2
2 Chromium-Molybdenum Steel Compositions	3
3 Chromium-Nickel Stainless Steel Compositions	4
4 Copper-Nickel and Nickel Alloy Compositions	5
5 Minimum Overlap for Classes 1, 2, and 5 Style B Inserts	8
6 Dimensions of Class 3, Style D Inserts	9
7 Dimensions of Class 3, Style E Inserts	10
8 Cross-Sectional Dimensions and Tolerances for Classes 1, 2, 4, and 5 Inserts	11
A.1 Comparison of Classifications	14

List of Figures

Figure	Page No.
1 Standard Sizes and Shapes of Consumable Inserts	6
A.1 WRC-1992 (FN) Diagram for Stainless Steel Weld Metal	16
A.2 Effect of Base Metal Dilution on Ferrite Content in Stainless Steel Welds with Consumable Inserts.....	17
A.3 Fusibility Test Joint	19

Specification for Consumable Inserts

1. Scope

1.1 This specification prescribes requirements for the classification of plain carbon steel, chromium-molybdenum low alloy steel, stainless steel, nickel alloy, and copper-nickel alloy consumable inserts¹ for use in conjunction with the gas tungsten arc welding process. These inserts also may be used with any other welding process for which they are found suitable. Included are packaging and testing requirements.

1.2 Safety and health issues and concerns are beyond the scope of this standard and, therefore, are not fully addressed herein. Some safety and health information can be found in the Informative annexes A5 and A10. Safety and health information is available from other sources, including, but not limited to ANSI Z49.1, *Safety in Welding, Cutting, and Allied Processes*, and applicable federal and state regulations.

1.3 This specification makes use of both U.S. Customary Units and the International System of Units (SI). The measurements are not exact equivalents, therefore, each system must be used independently of the other without combining in any way when referring to material properties. The specification with the designation A5.30 uses U.S. Customary Units. The specification A5.30M uses SI Units. The latter are shown within brackets [] or in appropriate columns in tables. Standard dimensions based on either system may be used for sizing of consumable inserts under A5.30 and A5.30M.

2. Normative References

The following standards contain provisions which, through reference in this text, constitute provisions of

this AWS standard. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However parties to agreement based on this AWS standard are encouraged to investigate the possibility of applying the most recent editions of the documents shown below. For undated references, the latest edition of the standard referred to applies.

2.1 The following ANSI and AWS standards² are referenced in the normative clauses of this document:

1. AWS A5.01, *Filler Metal Procurement Guidelines*
2. ANSI Z49.1, *Safety in Welding, Cutting, and Allied Processes*

2.2 The following ASTM standards³ are referenced in the normative clauses of this document:

1. ASTM D5-56 (or SAE HS-1086), *Metals & Alloys in the Unified Numbering System*
2. ASTM E 29, *Standard Practice for Using Significant Digits in Test Data to Determine Conformance with Specifications*
3. ASTM A 751, *Test Methods, Practices, and Terminology for Chemical Analysis of Steel Products*
4. ASTM E 75, *Test Methods for Chemical Analysis of Copper-Nickel and Copper-Nickel-Zinc Alloys*
5. ASTM E 76, *Test Methods for Chemical Analysis of Nickel-Copper Alloys*
6. ASTM E 1473 *Test Methods for Chemical Analysis of Nickel, Cobalt, and High Temperature Alloys*

¹“Consumable insert,” is defined in AWS A3.0, *Standard Welding Terms and Definitions*, as: “Filler metal that is placed at the joint root before welding, and is intended to be completely fused in the joint root to become part of the weld.”

²AWS standards and ANSI Z49.1 are published by the American Welding Society, 550 N.W. LeJeune Road, Miami, FL 33126.

³ASTM standards are published by the American Society for Testing and Materials, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959.