


AWS C4.1-77 (R2010)
An American National Standard



Criteria for Describing Oxygen-Cut Surfaces



American Welding Society



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An American National Standard**

**Approved by the
American National Standards Institute
Reaffirmed: October 29, 2009**

Criteria for Describing Oxygen-Cut Surfaces

1st Edition

Prepared by the
American Welding Society (AWS) C4 Committee on Oxyfuel Gas Welding and Cutting

Under the Direction of the
AWS Technical Activities Committee

Approved by the
AWS Board of Directors

Abstract

This document is an aid to assist users, inspectors, and producers in communicating among one another their needs with regard to the oxygen-cut surface.



American Welding Society

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International Standard Book Number: 978-0-87171-768-9
American Welding Society
550 N.W. LeJeune Road, Miami, FL 33126
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Printed in the United States of America
Reaffirmed: October 29, 2009

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Foreword

This foreword is not part of AWS C4.1-77 (R2010), *Criteria for Describing Oxygen-Cut Surfaces*, but is included for informational purposes only.

This standard was originally published in 1977; it was reaffirmed in 2010. This standard encompasses this user's document to aid in communication between parties and a separate plastic replica *Surface Roughness Guide for Oxygen Cutting* which shows four samples of oxygen cut surfaces with varying levels of quality.

The front matter was updated during the 2010 reaffirmation but no changes were made to the text of the document or the plastic weld replica.

Comments and suggestions for the improvement of this standard are welcome. They should be sent to the Secretary, AWS C4 Committee on Oxyfuel Gas Welding and Cutting, American Welding Society, 550 N.W. LeJeune Road, Miami, FL 33126.

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Criteria for Describing Oxygen-Cut Surfaces

This document is an aid to assist users, inspectors, and producers in communicating among one another their needs with regard to the oxygen-cut surface.

The quality of an oxygen-cut surface is dependent on many variables, some of which are as follows:

- (1) Material and surface condition
- (2) Operator ability
- (3) Condition and design of torches, tips, and cutting machines
- (4) Oxygen purity
- (5) Vibrations from nearby equipment
- (6) Movement of the workpiece due to thermal expansion and contraction

Acceptance levels of an oxygen-cut surface should be established by the user, based upon the service requirements of the part. It is recommended that criteria pertinent to these acceptance levels be incorporated into the users shop drawings and bid documents.

Repair of Oxygen-Cut Surfaces

It may be necessary to repair the as-cut surface to correct one of the conditions herein described to meet acceptance levels established by the user. One accepted method is grinding. However, when repairs to meet acceptance levels require welding, such repair should be performed in accordance with applicable code requirements. The method of repair should be mutually agreeable to user and producer.