



COMPANY STANDARDS

C6004-05

TITLE :

CARBON DIOXIDE, WELDING GRADE

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DATE :

1993-09-20

Ø.GENERAL : Carbon Dioxide (CO₂) as a shielding gas for Electric arc welding of steel offers several advantages. These are, in particular, better joint penetration, high welding speed and lower welding costs. Purity of gas must be ensured and any moisture in the gas will lead to porosity of weldment.

1.SCOPE : This specification gives the characteristics, purity, condition of supply, method of testing and sampling of Welding Grade CO₂. It also specifies identification marking of CO₂ cylinders.

2.CHARACTERISTICS & REQUIREMENTS :

These shall be as mentioned in Table-1.

3.CONDITION OF SUPPLY :

CO₂ shall be supplied in

- a) High pressure cylinders conforming to IS:8198 (Part 3)-1984 " Code of Practice for Steel Cylinders for Compressed Gases - High Pressure Liquifiable Gases" or
- b) Bulk Liquid CO₂ Storage System

4.IDENTIFICATION MARKING IN CASE OF SUPPLY IN CYLINDERS :

The following marking shall be present on the cylinder, as per IS:4379-1981 "Identification of the contents of Industrial Gas Cylinders".

- 1. Symbol CO₂
- 2. Colour of cylinder Body Black and
Shoulder White or
Aluminum White

5.SAMPLING : In case the gas is supplied in cylinders, sampling shall be as per clause 5 of IS:307-1966.

6. DESIGNATION :

This material shall be procured under the following stock numbers :

Supplied in High Pressure Cylinders .. C600405000

Supplied in Bulk Liquid CO₂ Storage System .. C600405001

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PREPARED BY: CSD	ISSUE NO: TWO	REPLACEMENT FOR:	REF: -
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7. CERTIFICATE OF CONFORMANCE :

The supply shall be accompanied by a certificate of conformance to Grade-1 of IS:307-1966.

TABLE-1
REQUIREMENTS OF CARBON DIOXIDE, WELDING GRADE

Sl. No.	Characteristic	Requirement	Method of test - Clause no. in Appendix of IS:307-1966
1.	Type of gas	Active Oxidising	--
2.	Combustibility	Neither combustible nor supporter of combustion	--
3.	Odour	Free from odour	--
4.	Colour	Colourless	--
5.	Carbon dioxide % by volume, min	99.9	A-2
6.	Carbon monoxide, ppm, max.	10	A-3
7.	Acid and Sulphur Dioxide	To pass test	A-4
8.	Phosphine and Hydrogen Sulphide	To pass test	A-5
9.	Moisture, % by Volume, max.	0.001	A-6
10.	Dew Point	Below minus 40°C	-
11.	Arsenic mg/normal m ³ max.	0.5	A-7
12.	Oil, ppm by weight, max.	5	A-8

NOTE : When pressure of the cylinder has dropped to 1.4 MPa, the cylinder should be replaced with a new cylinder, in order to prevent backing-up of moisture and other contaminants into the cylinder.

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