

23-GP-7
March 1951
CANCELLATION
February 1972

CANADIAN GOVERNMENT SPECIFICATIONS BOARD

Schedule

of

SAFETY RECOMMENDATIONS FOR METALLIZING

This schedule is cancelled since it is no longer
of significant interest to federal government agencies.



ANADA

CANADIAN GOVERNMENT SPECIFICATIONS BOARD

SCHEDULE

OF

SAFETY RECOMMENDATIONS FOR METALLIZING

23-GP-7

16 MARCH 1951

Withdrawn
ARCHIVES COPY

CORRESPONDENCE REGARDING THIS SCHEDULE SHOULD BE ADDRESSED
TO THE SECRETARY, CANADIAN GOVERNMENT SPECIFICATIONS BOARD,
NATIONAL RESEARCH COUNCIL, OTTAWA, CANADA

NATIONAL RESEARCH COUNCIL, OTTAWA, CANADA

Price

10 CENTS

For the convenience of those wishing to purchase publications of the Canadian Government Specifications Board, a coupon system has been introduced in order to make payment for these publications relatively simple. Coupons are available in denominations of 5c., 25c., and 50c. and may be obtained by forwarding a remittance to the National Research Council in the form of Bank, Express, or Post Office Money Order, or a cheque made payable at par in Ottawa, to Receiver General of Canada, credit National Research Council (stamps are not acceptable). These coupons can then be used when submitting orders for publications. An Index of Specifications can be obtained on request.

COMMITTEE ON SPECIFICATIONS FOR METALLIZING
(Membership at date of approval by the Committee
for submission to the CGSB)

Nichols, H.J. (Chairman)	Physical Metallurgy Division Dept. of Mines and Technical Surveys
Tuttle, A.S. (Vice-Chairman)	The International Nickel Company
Betts, C.H., Capt.	Department of National Defence/Army
Blyth, R.C.	Department of Transport
Boltz, D.C.	American Welding Society
Carwardine, B.	Department of Public Works
Chatfield, H.W.	Canadian Pacific Railway
Ellis, O.W.	Ontario Research Foundation
Fink, N.H.	Inspection Services Department of National Defence
Finlay, J.M.	Canadian National Railways
Halferdahl, A.C.	National Research Council
Judge, R.	Department of National Defence/Navy
Karn, H.C.	Canadian Industries Limited
Keuninckx, W.C. (alternate for F.I. Mullins)	Wall-Colmonoy (Canada) Limited
MacEwan, J.U.	McGill University
McIndoo, W.J., F/L	Department of National Defence/Air
Mullins, F.I.	Wall-Colmonoy (Canada) Limited
Riddell, A.R.	Lloyd's Register of Shipping
Royer, J.	Welding and Supplies Co. Limited
Thomasson, H.	Canadian Westinghouse Co. Limited
Tuer, R.E. (alternate for R.J. Yott)	B.W. Deane and Company
Van Winsen, A.	Canadian Hoffman Machinery Co. Ltd.
Yott, R.J.	B. W. Deane and Company
Watterud, E.T. (Secretary)	CGSB/National Research Council

23-GP-7

16 March 1951

CANADIAN GOVERNMENT SPECIFICATIONS BOARD

SCHEDULE
OF

SAFETY RECOMMENDATIONS FOR METALLIZING

This SCHEDULE is based on Part II of Recommended Practices for Metallizing, No. C2.1-50T, as prepared by the American Welding Society Committee on Metallizing, revised to include minor changes recommended by the C.G.S.B. Committee on Specifications for Metallizing.

The preparation of this Schedule has been made possible through a reciprocal arrangement between the American Welding Society and the Canadian Government Specifications Board. The kind permission of the Society to use their Standard as a basis for the Schedule is gratefully acknowledged.

16 March 1951

CANADIAN GOVERNMENT SPECIFICATIONS BOARD

Schedule
of

SAFETY RECOMMENDATIONS FOR METALLIZING

1. GENERAL

This Schedule describes some of the more important safety precautions to be followed in metallizing. It is recommended that all personnel concerned with metallizing become familiar with these rules and the more extensive requirements contained in the following publications:

- (1) Safety in Electric and Gas Welding and Cutting Operations, American Standard Z49.1, American Welding Society.
- (2) Safe Practices for Installation and Operation of Welding and Cutting Equipment, International Acetylene Association.
- (3) Grinding, Polishing and Buffing Equipment Sanitation, American Standard Z43, American Standards Association Inc.
- (4) Code for Head and Eye Protection, Canadian Standard Z94-1948, Canadian Standards Association, Ottawa.

2. EQUIPMENT2.1 Oxygen

1. Always refer to oxygen by its full name, oxygen, and not by the word air.
2. Never use oxygen near flammable materials, especially grease, oil or any substance likely to cause or accelerate fire. Oxygen itself is not flammable but does support combustion.
3. Do not store oxygen and acetylene or any other fuel gas cylinders together. Oxygen cylinders should be grouped separately. Empty cylinders should be stored separately from cylinders containing gas.
4. Never permit oil or grease to come in contact with oxygen cylinders, valves, regulators, hose or fittings. Do not handle oxygen cylinders with oily hands or oily gloves.
5. Never use oxygen pressure-reducing regulators, hose or other pieces of apparatus with any other gases.
6. Open oxygen cylinder valves slowly.
7. Never attempt to mix any other gases in an oxygen cylinder.

8. Oxygen must never be used for ventilation, or as a substitute for compressed air.

9. Never use oxygen from cylinders without having a suitable pressure-reducing regulator attached to the cylinder valve.

10. Never tamper with nor attempt to repair oxygen cylinder valves.

11. Before opening cylinder valve make certain that regulator screw is turned out fully to the left. This reduces danger of spontaneous combustion on opening cylinder valve.

2.2 Fuel Gases

1. Call all fuel gases by their full name: thus acetylene and not gas.

2. All equipment such as hose for the gases being used, compressors, regulators, etc. should be inspected regularly for leaks and loose connections.

3. Fuel gas cylinders should be used and stored valve end up.

4. Never use any fuel from a cylinder without having a suitable pressure-reducing regulator attached to the cylinder valve.

5. Turn the fuel gas cylinder so that the valve outlet will point away from the oxygen cylinder.

6. Never use fuel-gas pressure-reducing regulators or hose interchangeably for different gases.

7. Keys for opening cylinder valves must be kept on valve stems while cylinders are in use so that the flow of gas may be quickly stopped in an emergency.

8. Never attempt to transfer a fuel gas from one cylinder to another nor to refill a cylinder, nor to mix any gas or gases in a cylinder.

9. Should a leak occur in a cylinder, take the cylinder out in the open air, keeping it away from fires or open lights. Notify the manufacturer at once.

10. When opening an acetylene cylinder valve, turn key or spindle not more than one and one-half turns. For other fuel gases consult recommendations of manufacturers.

11. Never use acetylene at pressures in excess of 15 psi.; the use of higher pressures is prohibited by all insurance authorities and by law in many localities. Other fuel gases may be used at higher pressures. Consult recommendations of manufacturers.

12. Never use unalloyed copper tubing or fittings with acetylene, except for gun nozzle.

13. Never use propane or similar gas unless it is odorized.

14. If acetylene manifolds are used, then flashback arrestors must be provided at each tank.

15. Gas compressor installations required for use with natural or manufactured gas should be approved and checked by the local gas company.

16. In low-pressure gas supply lines, flashback arrestors (check valves) should be installed after the compressor.

17. In high-pressure gas supply lines flashback arrestors (check valves) should be installed after the fuel gas regulator for the metallizing gun.

2.3 Compressed Air

1. Be sure air line is free of excess oil and moisture.

2. Do not use compressed air to clean equipment except as recommended by the manufacturer. Never use compressed air to clean clothing.

3. Never use compressed air for metallizing operations at pressures other than those recommended by the manufacturers of metallizing equipment.

3. PERSONNEL

3.1 During Blasting

1. Always perform blasting operations in an enclosure so as to prevent abrasives from injuring other personnel as well as to protect industrial equipment from damage.

2. Always wear adequate hoods, masks, gloves, aprons, leggings, etc., for protection from flying abrasives and harmful dusts.

3. Masks must meet the requirements of CSA Standard Z94-1948. Never use over 25 lb. of air pressure at hose inlet to the mask. Relief valves must be provided to prevent exceeding this pressure.

4. Always provide proper exhaust ventilation for all blasting operations.

3.2 During Spraying

1. Never direct a metallizing gun toward any person.

2. Never direct a metallizing gun, when in operation, at any tank or other container which holds or has held combustible materials.

3. Do not spray in the vicinity of flammable or combustible materials.

4. Use goggles or other eye protection to protect the eyes during bonding and spraying operations.

5. Do not spray in confined spaces without adequate ventilation and/or individual respiratory equipment.

6. Adequate ventilation should be provided in spray booths, in tanks or other confined spaces to prevent the accumulation of fumes or dusts and to minimize the danger of dust explosions. (Aluminum and magnesium dusts are particularly hazardous. Great care must be used in handling them.)

7. Never use bag or filter type dust collectors for metal spray dusts.

8. All closed type collectors should be provided with blow-out holes or relief panels. Blow-out panels should be provided at the joints of the ventilation piping.

9. All fans, pipes, dust arrestors and motors should be electrically grounded.

10. Ventilating fans should always be kept running when cleaning out booths, pipes, etc., to prevent the accumulation of dusts or fumes in the system.

11. No welding or cutting should be done in the repair of any ventilating or dust collecting equipment unless the equipment has been thoroughly washed and all metal dust removed.

12. Suitable respiratory equipment must be provided for the operator, and other workers in the fume area, when lead, its alloys, or cadmium are to be sprayed. Respiratory equipment should also be provided when required by the intensity of the fume concentration in the spraying of zinc, its alloys, chromium alloys and all other metals.

3.3 During Finishing

1. Precautions should be taken during grinding operations covering stone guards, stones, wheels, surface speeds and the use of goggles and proper exhaust equipment. See Grinding, Polishing and Buffing Equipment Sanitation, American Standard, Z43.

4. GENERAL PRECAUTIONS

1. Do not pick up hot objects.
2. Do not move individual cylinders unless their valve protection caps, where provided, are in place, hand tight.
3. Do not drop or abuse cylinders in any way.
4. Make certain that cylinders are well fastened at their stations so that they will not fall.
5. Do not use a hammer or wrench to open cylinder valves.
6. Never force connections which do not fit.
7. Never tamper with cylinder safety devices.
8. Always protect hose from being trampled on or run over. Avoid tangles and kinks. Do not leave hose so that it can be tripped over.
9. Protect hose and cylinders from flying sparks, hot objects and open flames.
10. Do not allow hose to come in contact with oil or grease; these deteriorate the rubber and constitute a hazard with oxygen.
11. Be sure that the connections between the regulators, adapters and cylinder valves are gas tight. Escaping acetylene and other fuel gases can generally be detected by the odor. Test with soapy water, never with an open flame.

12. Do not use matches for lighting metallizing guns; hand burns may result. Use a friction lighter or some other suitable source of ignition. Do not attempt to relight a gun that has blown out without first checking the complete unit for the cause of the trouble.

13. Do not hang a metallizing gun by its hose on regulators or cylinder valves.

14. When spraying is to be stopped temporarily, release the pressure adjusting screws of the regulators by turning them to the left.

15. When the spraying is to be stopped for a long time, (during lunch hour or overnight) or taken down, close the cylinder valves and then release all gas pressures from the regulators and hose by opening the torch valves momentarily. Close the gun valve. If the equipment is to be taken down, make certain that all gas pressures are released from the regulators and hose and that the pressure adjusting screws are turned to the left until free.

16. Care should be exercised when cleaning gas mixing chambers of metallizing guns to see that no mineral oil enters the fuel gas or oxygen passages.

17. Do not use mineral oil or petroleum grease for lubricating the valves of a metallizing gun in contact with any of the fuel gases. Use only special lubricants recommended by manufacturers of these parts.

18. When using fuel gas compressors with manufactured or natural gas the recommendations of the manufacturer should be carefully followed.

Correspondence regarding this Schedule should be addressed to the Secretary, Canadian Government Specifications Board, National Research Council, OTTAWA, Ontario.