

1.0 GENERAL

1.1 General & Related Work

- .1 Read this Section in conjunction with all drawings and all other Sections so as to comply with the requirements of Division 1 and the General Conditions of the Contract.
- .2 Requirements specified elsewhere:

Division 13, Section 13080 Asbestos Abatement – General Provisions
- .3 The intent of this Section is to provide safe work practices and procedures to govern the handling, removal, clean-up and disposal of asbestos-containing pipewrap insulation performed by Glove Bag Method at locations outside a prepared Type 3 enclosure.

1.2 Outline of Work

- .1 Supply all labour, material, plant and equipment necessary to safely execute and complete all work of this Section while in conjunction with work specified, required or implied under Section 13080, Asbestos Abatement - General Provisions.
- .2 Isolate the Asbestos Work Area from adjoining spaces through the placement of specified barriers and partitions at the perimeter of each phase or work area.
- .3 Remove and dispose of pipewrap insulation on straight runs and fittings of mechanical services scheduled for re-location, demolition and/or other such alterations or upgrades where present at locations outside a prepared Type 3 enclosure.
- .4 Notwithstanding the above, complete the removal of pipewrap insulation within a temporary enclosure as specified under Section 13082, Asbestos Abatement - Type 2 or from within a fully enclosed work area as specified under Section 13083, Asbestos Abatement - Type 3 at locations where removal following the Glove Bag Method can not be completed safely. The Asbestos Abatement Consultant shall determine on site which method is to be followed.
- .5 Notwithstanding the above, exclude the removal of pipewrap insulation visibly determined to be fibreglass insulation which is free of asbestos contamination.

1.3 Inspection

- .1 The following Milestone Inspections are to take place during work of this Section:
 - .1 Milestone Inspection A - Site Dismantlement
Inspection of work area at completion of work, but prior to site dismantlement.

1.4 **Worker Protection**

.1 **Respiratory Protection**

- .1 During installation, use, or removal of a glove bag, or while within a Glove Bag Work Area; use negative pressure non-powered half-face respirators equipped with high efficiency (HEPA) cartridge filters.

.2 **Asbestos Abatement Work Area Entry & Exit Procedures**

- .1 Before entering the Asbestos Work Area, don respirator with new or tested filters, coveralls and hood. Protective clothing shall cover hair and reusable clothing.
- .2 Before leaving Asbestos Work Area, remove gross contamination from protective clothing using HEPA vacuum, then remove all contaminated clothing and equipment except respirator.
- .3 Clean contaminated footwear, hard hats, etc., or place in sealed polyethylene bag ready for reuse.
- .4 Exit work area before removing respirator then proceed directly to wash area and complete the following:
 - .1 Wash exposed skin and respirator with soap and water.
 - .2 Seal inlet side of respirator filters with tape then remove filters for testing or dispose of as asbestos-contaminated waste.

1.5 **Visitor Protection**

- .1 Protective equipment shall be required by authorized visitors only where glove bag is ripped, cut or otherwise opened.

2.0 **PRODUCTS AND FACILITIES**

2.1 **Materials and Equipment**

- .1 **Glove Bag**: Single use prefabricated, 0.25 mm (10 mil) minimum thickness polyvinylchloride bag with integral 0.25 mm (10 mil) thick polyvinylchloride gloves and elasticized ports. Bag must be equipped with reversible double-pull double-throw zipper to facilitate progressive movement along pipe and also be equipped with interior zip and straps for sealing ends of bag around pipe. Acceptable product: Safe-T-Strip manufactured by Asbesguard Equipment Inc., in configurations suitable for work.
- .2 **Knife**: Knife with fully retractable blade for use inside glove bag.
- .3 **Securing Straps**: For glove bag, reusable nylon straps at least 1" wide with metal tightening buckle for sealing ends of bags around pipe and insulation.
- .4 **Sprayer**: Garden reservoir type, low velocity, capable of producing mist or fine spray.

3.0 EXECUTION

3.1 Preparation

- .1 Submit pre-removal damage survey to Asbestos Abatement Consultant.
- .2 Moving of equipment, tools, supplies, and stored materials which can be performed without disturbing asbestos will be performed by others.
- .3 Segregate Asbestos Work Area use by closing doors, placing of barricades or tape barriers, etc., at the perimeter of each phase or work area.
- .4 Isolate or otherwise shutdown HVAC system, vents and diffusers located within the Asbestos Work Area.
- .5 Provide required tools, equipment, vacuum, materials and waste receptors within the established Asbestos Work Area.
- .6 Post required signs in all areas where access to the Asbestos Work Area is possible.
- .7 Do not commence contaminated work until authorized by the Asbestos Abatement Consultant.

3.2 Maintenance of Contaminated Work Area

- .1 Maintain work area in a clean and tidy state.
- .2 Ensure barriers and polyethylene linings are effectively sealed and taped. Repair damaged barriers and remedy defects immediately upon discovery.

3.3 Pipe Insulation Removal

- .1 Prior to start of work, ensure work area has been isolated with tape barriers, saw-horses, or other barriers, posted with notices marking the area as asbestos removal area site and that authorization to proceed has been received from the Asbestos Abatement Consultant.
- .2 Provide polyethylene drop sheet under piping where damaged or unjacketed insulation is present.
- .3 Spray surface of damaged jacketing with mist of amended water then tape over area of damage to provide temporary repair.
- .4 Mist areas of insulation with no jacketing and wrap with polyethylene.
- .5 Clean surface of pipe or minor amounts of fallen or damaged insulation by HEPA vacuuming or by damp wiping.
- .6 Place tools necessary to remove insulation in tool pouch then zip bag onto pipe and seal ends of bag with cloth securing straps. For valve glove bags, seal valve cover with wire tie or equivalent.

- .7 Place hands into gloves and use necessary tools to remove insulation from pipe.
- .8 Arrange insulation in bag to obtain full capacity of bag.
- .9 Roll jacketing carefully to minimize the possibility of ripping or puncturing bags.
- .10 Insert nozzle of spray pump into bag through valve and wash down pipe and interior of bag thoroughly. Alternate use of each hand to aid washing process.
- .11 Wet surface of insulation in lower section of bag and any exposed end of asbestos insulation remaining on pipe.
- .12 If bag is to be removed from pipe for use at a new location, seal closure strip from inside of bag then insert nozzle of HEPA vacuum into valve opening and evacuate air from balance of bag. Re-install and seal in new location before re-opening closure strip. Repeat insulation removal operation.
- .13 If bag is to be moved along the same pipe, insert nozzle of HEPA vacuum into valve opening and evacuate air from bag prior to loosening holding straps then carefully move bag along length of pipe and re-seal to pipe using double-pull zipper to pass hangers. Repeat insulation removal operation.
- .14 Should the glove bag become ripped, cut or opened in any way, cease work and repair opening before continuing work. If the rip, cut or opening cannot be easily repaired, dispose of as contaminated waste and replace with new.
- .15 Spilled material must be cleaned up using a HEPA vacuum immediately upon discovery.
- .16 To remove bag after completion of insulation removal or as each bag is filled:
 - .1 Wash top section of glove bag and tools thoroughly.
 - .2 Place tools in one hand (glove), then pull out inverted, twist to create a separate pouch, tape inverted hand at two (2) separate locations 1" apart to seal pouch.
 - .3 Remove inverted glove and tools by cutting between the two (2) tape seals.
 - .4 Place inverted glove and tools into the next clean glove bag to be used or into a water bucket, open pouch underwater and clean tools and then allow to dry.
 - .5 Insert nozzle of HEPA vacuum into valve opening and evacuate air from bag. Remove nozzle from valve opening and seal over end of valve with tape.
 - .6 Pull a 6 mil polyethylene bag over glove bag before removing from pipe.
 - .7 Remove securing straps, unfasten zipper and place sealed glove bag into a sealed 6 mil polyethylene bag so as to create an asbestos waste container.
- .17 Ensure newly exposed section of pipe is free of residue before resuming removal work or leaving the area. If necessary, after removal of each section of asbestos, vacuum all surfaces of pipe, using HEPA filtered vacuum equipment or wet wipe with damp cloth.

- .18 Before completion of shift, seal surfaces of exposed pipe with lock-down agent to seal any residual fibres.
- .19 Cover exposed ends of remaining asbestos insulation with heavy coat of bridging encapsulant.
- .20 Remove drop sheet and dispose of as contaminated waste.

3.4 Site Dismantlement and Clean-up

- .1 Following completion of work within each separate Asbestos Work Area, and again at the completion of each work shift, inspect the work area to ensure required removal and clean-up have been completed and the area is free of any visible signs of asbestos or other debris. Inspection must be completed by Shift Superintendent.
- .2 Schedule and obtain written approval of Milestone Inspection A (Site Dismantlement) before proceeding with the removal of all barricades, etc.

End of Section

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