



NOVA SCOTIA  
**APPRENTICESHIP**  
AGENCY

**NOVA SCOTIA**  
**OCCUPATIONAL STANDARD**  
**INDUSTRIAL COATINGS**  
**APPLICATOR**

# FORWARD

This occupational standard was developed by a committee of industry experts in the field led by a facilitator from the Nova Scotia Apprenticeship Agency (NSAA). It has the following objectives:

- to describe and group the tasks performed by skilled workers
- to identify which tasks are performed by skilled workers
- to develop instruments for use in the preparation of examinations and curricula for training leading to the certification of skilled workers
- to facilitate the mobility of apprentices and skilled workers in Canada; and,
- to supply employers, employees, associations, industries, training institutions and governments with analyses of occupations.

Any questions, comments, or suggestions for changes, corrections, or revisions to this standard or any of its related products may be forwarded to:

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# STRUCTURE OF THE OCCUPATIONAL STANDARD

To facilitate the understanding of the occupation, the work performed is divided into the following categories:

**Description of the trade:** an overview of the trade's duties

**Essential Skills Summary:** An overview of how each of the 9 essential skills is applied in this trade

**Industry Expected Performance:** description of the expectations regarding the level of performance of the tasks, including information related to specific codes, regulations and standards that must be observed

**Pie Chart of Red Seal Examination Weightings:** a graph which depicts the percentages of exam questions assigned to the major work activities

**Task Matrix:** a chart which outlines graphically the major work activities, tasks and sub-tasks of this standard

**Major Work Activity (MWA):** the largest division within the standard that is comprised of a distinct set of trade activities

**Task:** distinct actions that describe the activities within a major work activity

**Task Descriptor:** a general description of the task

**Sub-task:** distinct actions that describe the activities within a task

**Range of Variables:** elements and examples (not all inclusive) that provide a more in-depth description of a term used in the performance criteria and evidence of attainment

# DESCRIPTION OF INDUSTRIAL COATINGS APPLICATOR

“Industrial Coatings Applicator” is this trade’s official provincial occupational title approved by the Nova Scotia Apprenticeship Agency.

This standard covers tasks performed by an Industrial Coatings Applicator. Industrial Coatings Applicators apply and remove protective coatings in commercial, institutional, marine and industrial settings. They prepare a variety of substrates (concrete, wood, synthetics and metal) using a variety of tools, equipment and techniques prior to the application of materials such as paint, high performance coatings, waterproofing and fireproofing. These materials are applied for a variety of reasons such as substrate protection, sanitation, identification, cosmetic appearance and safety.

Industrial Coatings Applicators apply the products adhering to manufacturers’ recommendations, industry standards and project specific specifications. They take care to protect the environment and other substrates from unintended overspray, paint splatter or damage by ensuring proper containment and/or protective coverings are utilized.

Industrial Coatings Applicators are employed by painting contractors, municipalities, facility owners and maintenance contractors or are self-employed. Industrial Coatings Applicators may work for years on a single site such as a shipyard or a refinery. They may also work on vessels, vats, tunnels, bridges, dams, towers, power plants and other large infrastructure projects. Others may work for contractors that rarely work on the same site more than once.

Industrial Coatings Applicators may encounter hazardous materials such as isocyanates, free silica, lead, asbestos, volatile organic compounds (VOC’s), dust, fumes, mists and carcinogenic materials. They protect themselves and others by using required personal protective equipment (PPE) and safety equipment. They must also be aware of these materials’ environmental impacts (e.g. waterways, air quality, soil contamination).

The work of Industrial Coatings Applicators can be physically demanding. They may work at heights while preparing substrates or applying coatings using many types of access equipment such as ladders, scaffolding, swing stages, mobile elevated work platforms and other specialty equipment requiring good balance and physical flexibility. Industrial Coatings Applicators build knowledge, confidence and trust in their equipment and co-workers to perform their work in a safe and environmentally responsible manner.

Key attributes for people entering this trade are manual dexterity, an eye for detail and safety awareness. The trade often requires working at heights and in confined spaces in a variety of physical positions such as squatting, standing, kneeling and climbing to perform tasks such as abrasive blasting, hand and power tool work, spraying, and brush and roller work. Industrial Coatings Applicators must have the ability to plan and schedule work, and read drawings and specifications. They must have knowledge of many types of products, their properties, applications and safe handling procedures according to manufacturers’ product data sheets

(PDS) and safety data sheets (SDS). They must be able to perform basic math skills to calculate areas and determine the amount of materials required. They also need to measure the wet film and dry film thickness of coatings according to product specifications.

Good communication skills are required by Industrial Coatings Applicators who often interact with contractors, co-workers, other tradespeople and site personnel.

This standard recognizes similarities or overlaps with the work of Painter and Decorators and Insulators (Heat and Frost).

Industrial Coatings Applicators play a crucial role as mentors and trainers to apprentices in the trade. They may also advance to supervisory positions for painting contractors or in other related fields such as construction management, instructing, estimating, mentoring or coatings inspections.

# ESSENTIAL SKILLS SUMMARY

Essential skills are needed for work, learning and life. They provide the foundation for learning all other skills and enable people to evolve with their jobs and adapt to workplace change.

Through extensive research, the Government of Canada and other national and international agencies have identified and validated nine essential skills. These skills are used in nearly every occupation and throughout daily life in different ways. The nine identified skills are:

- Reading
- Document Use
- Writing
- Oral Communication
- Numeracy
- Thinking
- Digital Technology
- Working with Others
- Continuous Learning

A series of CCDA-endorsed tools have been developed to support apprentices in their training and to be better prepared for a career in the trades. The tools can be used independently or with the assistance of a tradesperson, trainer, employer, teacher or mentor to:

- understand how essential skills are used in the trades;
- learn about individual essential skills strengths and areas for improvement; and
- improve essential skills and increase success in an apprenticeship program.

Tools are available online or for order at: [Skills for Success – Assessment and training tools - Canada.ca](#)

The application of these skills may be described throughout this document within the competency statements which support each subtask of the trade. For a complete description of the nine essential skills for various trades, please visit: [Explore careers by essential skills - Job Bank](#)

# ROLES AND OPPORTUNITIES FOR SKILLED TRADES IN A SUSTAINABLE FUTURE

Climate change affects all of us. Trades play a large role in implementing solutions and adjusting to changes in the world.

Throughout this standard, there may be specific references to tasks, skills and knowledge that clearly show this trade's role in a more sustainable future. Each trade has different roles to play and contributions to make in their own way.

For example:

- Construction tradespeople need to consider the materials they are using, building methods, and improvements to mechanical and electrical installations. There are important changes to codes and standards to help meet the climate change goals and commitments set for 2030 and 2050. Retrofits and new construction of low-energy buildings provide enormous opportunities for workers in this sector. Concepts, such as energy efficiency and regarding buildings as systems are foundational.
- Automotive and mechanical trades are seeing a shift towards the electrification of vehicles and equipment. As a result, new skills and knowledge will be required for tradespeople working in this sector. There are mandates for sales of new light-duty zero-emission vehicles (ZEV) in Canada, with the goal of achieving 100% ZEV sales by 2035. Due to this mandate, the demand for these vehicles is growing quickly among consumers and fleets. With this escalating demand, the need for skilled workers to maintain and repair these vehicles is also increasing.
- In industrial and resource sectors, there is pressure to move towards increased electrification of industrial processes. Many industrial and commercial facilities are also being upgraded to improve energy efficiency in areas such as lighting systems, and new production processes and technologies. There are also opportunities in carbon capture, utilization and storage (CCUS), as well as the production and export of low-carbon hydrogen.
- Trades in the service sector may also need to be aware of responsible sourcing, as well as efficient use of products and materials. New ways of working better are always a part of the job.

There are fast-moving changes in guidelines, codes, regulations and specifications. Many are being implemented for the purpose of energy efficiency and climate change. Those that affect specific trades may be mentioned within the standard. Examples of these guidelines and legislation include:

- The National Energy Code of Canada for Buildings (NECB).
- The Canadian Net-Zero Emissions Accountability Act (CNZEEA).
- Programs that encourage sustainable building design and construction such as Leadership in Energy and Environmental Design (LEED) and the Zero Carbon Building (ZCB) standards.
- The Montreal Protocol for phasing out R22 refrigerants.
- Energy efficiency programs such as ENERGY STAR.
- Principles of the United Nations Declaration for the Rights of Indigenous Peoples pertaining to energy sector development.

Apprentices and tradespeople need to increase their climate literacy and reinforce their own understanding of energy issues and environmental practices. It is important for them to understand why these changes are happening and their effect on trades' work. While individual tradespeople and apprentices may not be able to choose certain elements like; the architectural design of buildings, building material selection, regulatory requirements, use of electric vehicles and technologies, they must understand the impact of using these elements in their work. Impacts include using environmentally friendly products and following requirements related to the disposal and recycling of materials.

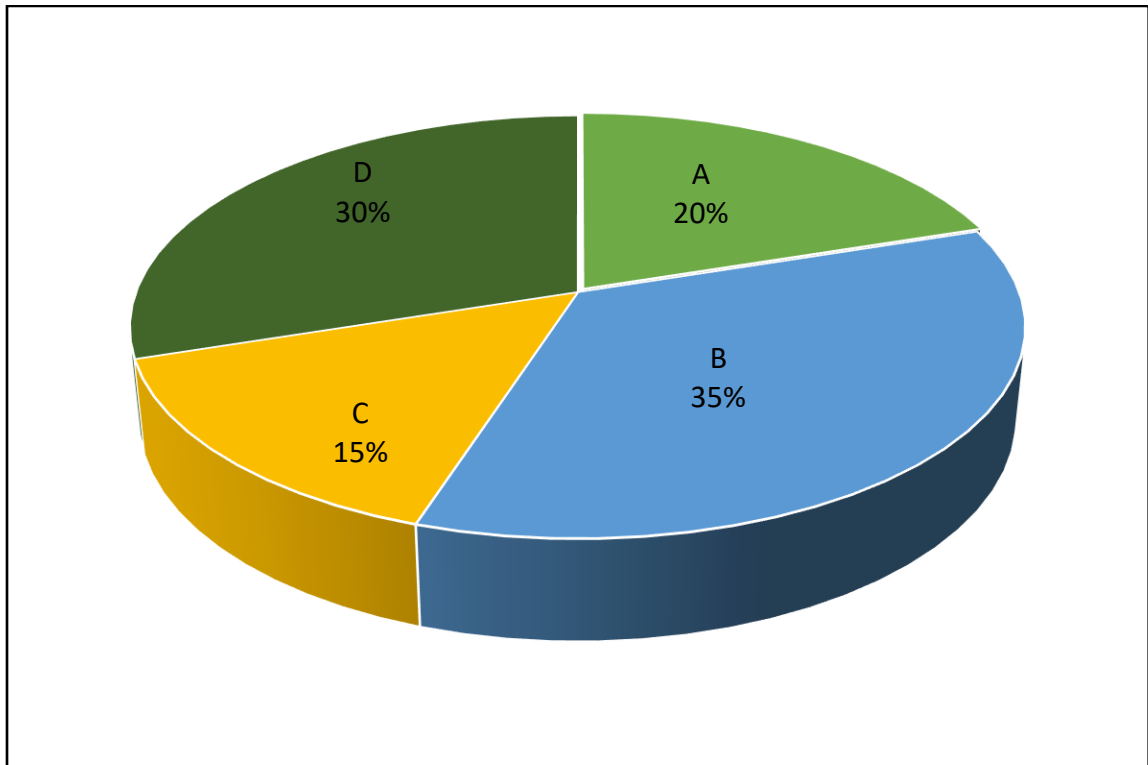
In apprenticeship, as well as in ongoing professional development, employers and instructors should encourage learning about these concepts, why they are important, how they are implemented, and the overarching targets they are aiming to achieve.

All in all, it's about doing the work better and building a better world.

# INDUSTRY-EXPECTED PERFORMANCE

All tasks must be performed according to Nova Scotia regulations and standards. All health and safety standards must be respected and observed. Work should be performed efficiently and at a high quality without material waste or environmental damage. All requirements of the manufacturer specifications, employers and client expectations must be met. At a journey person level of performance, all tasks must be completed with minimal direction and supervision. As a journey person progresses in their career there is an expectation they continue to upgrade their skills and knowledge to keep pace with industry and promote continuous learning in their trade through mentoring of apprentices.

# PIE CHART OF CERTIFICATION EXAM WEIGHTINGS



- MWA A Performs common occupational skills 20%
- MWA B Prepares substrates 35%
- MWA C Performs hazardous materials (HAZMAT) abatement 15%
- MWA D Prepares and applies coatings and compounds 30%

This pie chart represents a breakdown of the Industrial Coatings Applicator Nova Scotia provincial certification examination. The task matrix on the following pages indicates the breakdown of tasks and sub-tasks within each major work activity and the breakdown of questions assigned to the Tasks. The Provincial certification exam for this trade has 100 questions.

# INDUSTRIAL COATINGS APPLICATOR TASK MATRIX

## A – PERFORMS COMMON OCCUPATIONAL SKILLS

**20%**

<b>Task A-1</b> <b>Performs safety-related functions</b> <b>30%</b>	A-1.01 Uses personal protective equipment (PPE) and safety equipment	A-1.02 Maintains safe work environment	A-1.03 Performs lock-out and tag-out procedures	A-1.04 Protects the environment
<b>Task A-2</b> <b>Uses tools and equipment</b> <b>30%</b>	A-2.01 Uses hand tools	A-2.02 Uses power tools	A-2.03 Uses mechanical equipment	A-2.04 Uses rigging, hoisting and lifting equipment
	A-2.05 Uses access equipment	A-2.06 Uses measuring, monitoring and testing equipment		
<b>Task A-3</b> <b>Organizes work</b> <b>15%</b>	A-3.01 Uses documentation	A-3.02 Plans projects	A-3.03 Interprets drawings and specifications	A-3.04 Handles materials and supplies
<b>Task A-4</b> <b>Performs routine trade activities</b> <b>25%</b>	A-4.01 Protects surroundings	A-4.02 Masks objects, equipment and substrates	A-4.03 Performs post-application procedures	A-4.04 Performs quality control assessments
<b>Task A-5</b> <b>Uses communication and mentoring techniques</b> <b>0%</b>	A-5.01 Uses communication techniques	A-5.02 Uses mentoring techniques		

## B – Prepares substrates

**35%**

<b>Task B-6</b> <b>Performs general substrate preparation</b> <b>50%</b>	B-6.01 Performs initial assessment	B-6.02 Cleans substrate	B-6.03 Applies caulking	B-6.04 Abrades substrates
	B-6.05 Protects surrounding areas	B-6.06 Removes coatings and contaminants	B-6.07 Performs pre-repair inspection	
<b>Task B-7</b> <b>Prepares metal substrates</b> <b>20%</b>	B-7.01 Mechanically prepares metal substrates	B-7.02 Chemically treats metal substrates	B-7.03 Repairs metal substrates	
<b>Task B-8</b> <b>Prepares concrete substrates</b> <b>10%</b>	B-8.01 Mechanically prepares concrete substrates	B-8.02 Repairs concrete substrates		
<b>Task B-9</b> <b>Prepares synthetic substrates</b> <b>10%</b>	B-9.01 Mechanically prepares synthetic substrates	B-9.02 Chemically treats synthetic substrates	B-9.03 Repairs synthetic substrates	
<b>Task B-10</b> <b>Prepares wood substrates</b> <b>10%</b>	B-10.01 Mechanically prepares wood substrates	B-10.02 Chemically treats wood substrates	B-10.03 Repairs wood substrates	

## C - Performs hazardous material (HAZMAT) abatement 15%

<b>Task C-11 Prepares for hazardous material (HAZMAT) removal 50%</b>	C 11.01 Prepares for hazardous material removal	C 11.02 Prepares site		
<b>Task C-12 Performs hazardous material (HAZMAT) removal 50%</b>	C 12.01 Performs lead abatement	C 12.02 Performs mould remediation	C 12.03 Performs asbestos abatement	

## D – Prepares and applies coatings and mastics 30%

<b>Task D-13 Applies coatings 80%</b>	D-13.01 Primes substrates	D-13.02 Prepares coatings	D-13.03 Applies coatings with hand tools	D-13.04 Applies coatings with spray equipment
<b>Task D-14 Applies specialty coatings and mastics 20%</b>	D-14.01 Applies thermal sprays	D-14.02 Installs lining systems	D-14.03 Applies powder coatings	D-14.04 Applies liquid coatings with plural components
	D-14.05 Applies non-skid coatings	D-14.06 Installs fibre-reinforced plastics	D-14.07 Installs seamless flooring systems	D-14.08 Installs intumescent fireproofing
	D-14.09 Installs cementitious fireproofing	D-14.10 Applies solid epoxy bonding compounds		

# MAJOR WORK ACTIVITY A

## Performs common occupational skills

### TASK A-1 Performs safety-related functions

#### Task Descriptor

Industrial Coatings Applicators use and maintain personal protective equipment (PPE) and safety equipment to provide protection of self and others.

#### A-1.01 Uses personal protective equipment (PPE) and safety equipment

##### Performance Criteria

- |         |  |
|---------|--|
| 1.01.01 | recognize <b>workplace hazards</b> requiring the use of PPE and safety equipment                                     |
| 1.01.02 | select, inspect and use <b>PPE</b> and <b>safety equipment</b>   |
| 1.01.03 | select and use <b>respiratory protection equipment</b>   |
| 1.01.04 | perform positive and negative respirator airflow system seal tests   |
| 1.01.05 | recognize, tag, report, remove from service and replace worn, damaged, expired or defective PPE and safety equipment |
| 1.01.06 | organize, maintain and store PPE and safety equipment  |

##### Range of Variables

**workplace hazards** include: personal, environmental, shop/facility, high voltage systems, production sites, confined spaces, chemical, heights, motorized equipment, spills, defective equipment, hydraulic and high-pressure systems, HAZMAT materials, static electricity

**PPE** includes: safety footwear, safety glasses, single-use disposable suits, gloves, dust masks, safety vests, fall protection equipment, rescue and retrieval equipment, aprons, face shields, hearing protection, sunscreen, safety sunglasses, hard hats, coveralls

**safety equipment** includes: rollover protection structures, seatbelts, ventilation, first aid kits, fire extinguishers, eye wash stations, lock out devices, atmospheric monitors, fall protection, positive pressure breathing apparatus, spill kits

**respiratory protection equipment** includes: air-purifying respirators (APR), powered air-purifying respirators (PAPR), self-contained breathing apparatus (SCBA), pre-filters, cartridges, supplied-air respirators (SAR)

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## **A-1.02** Maintains safe work environment

### **Performance Criteria**

1.01.01	install <b>temporary safety protection</b>
1.01.02	identify ventilation requirements and determine <b>ventilation method</b>
1.01.03	organize work area
1.01.04	perform <b>housekeeping duties</b>
1.01.05	recognize and report unsafe work practices and <b>workplace hazards</b>
1.01.06	identify location of <b>workplace safety equipment</b> and <b>workplace safety information</b>

### **Range of Variables**

**temporary safety protection** includes: barrier tape, signage, guardrails

**ventilation method** includes: natural ventilation, doors, windows, vents, mechanical ventilation, fans, blowers, exhaust systems, positive and negative air systems

**housekeeping duties** include: securing extension cords, cleaning work area, removing tools and equipment not in use

**workplace hazards** include: personal, environmental, shop/facility, high voltage systems, production sites, confined spaces, chemicals, heights, motorized equipment, spills, defective equipment, hydraulic and high-pressure systems, HAZMAT materials, static electricity

**workplace safety equipment** includes: eye wash stations, fire extinguishers, spill kits, first aid kits

**workplace safety information** includes: safety data sheets (SDS), emergency phone numbers, escape routes, evacuation plans

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## **A-1.03** Performs lock-out and tag-out procedures

### **Performance Criteria**

1.03.01	notify site authorities and obtain required permits
1.03.02	identify hazards associated with equipment and components
1.03.03	isolate equipment and components and establish a <b>zero-energy state</b>
1.03.04	apply locking device to secure isolation
1.03.05	record lock-out information on tag attached to locking devices
1.03.06	verify isolation of equipment
1.03.07	remove tags and locks from equipment upon completion of task

### **Range of Variables**

**zero-energy state** includes: potential, kinetic, pneumatic, hydraulic, electric, mechanical

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## **A-1.04** Protects the environment

### **Performance Criteria**

- 1.04.01 identify and report **environmental hazards** that cause personal injury and harm the environment
- 1.04.02 follow due diligence procedures to avoid contamination
- 1.04.03 follow procedures to use, store, clean and dispose of hazardous materials
- 1.03.04 identify and use sustainable materials and equipment to minimize environmental impact

### **Range of Variables**

**environmental hazards** include: greenhouse gas emissions, VOCs, noise, solvents, heavy metals, overspray, fugitive dust, chemical spills

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## **TASK A-2** Uses tools and equipment

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### **Task Descriptor**

This task describes the use and maintenance of tools and equipment that Industrial Coatings Applicators use to perform tasks in their trade. Use of tools and equipment includes activities such as inspecting, storing, maintaining and performing minor repairs.

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## **A-2.01** Uses hand tools

### **Performance Criteria**

- 2.01.01 select, inspect and use **hand tools**
- 2.01.02 sharpen chisels, scrapers and chipping hammers
- 2.01.03 recognize, tag, report, remove from service, repair or replace worn, damaged or defective hand tools
- 2.01.04 organize, **maintain** and store hand tools

### **Range of Variables**

**hand tools** include: brushes, rollers, scrapers, utility knives, caulking guns, measuring tapes, wire brushes, chipping hammers, measuring scale mixing rulers, sanding blocks, extension poles, trowels

**maintain** includes: clean, sharpen, repair

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## **A-2.02** Uses power tools

### **Performance Criteria**

- 2.02.01 select, inspect and use **power tools** and **power tool attachments**
- 2.02.02 recognize, tag, remove from service, repair or replace worn, damaged, expired or defective power tools
- 2.02.03 clean, lubricate and **maintain** power tools
- 2.02.04 charge and store battery-powered tools
- 2.02.05 organize, maintain and store power tools

### **Range of Variables**

**power tools** include: angle grinders, die grinders, pneumatic needle scalers, belt sanders, palm sanders, deck scalers, powered chippers, bristle blasters, pneumatic paddles, mechanical mixers

**power tool attachments** include: grinding discs, cutting discs, flap discs, chisels, carbide bits, wire wheels

**maintain** includes: lubricate, charge, clean, sharpen, repair, safety guards and handles are in place

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## **A-2.03** Uses mechanical equipment

### **Performance Criteria**

- 2.03.01 select, inspect and use **mechanical equipment** and components
- 2.03.02 recognize, tag, report, remove from service, repair or replace worn, damaged, expired or defective mechanical equipment or components
- 2.03.03 clean, lubricate and **maintain** mechanical equipment or components
- 2.03.04 organize, maintain and store mechanical equipment and components

### **Range of Variables**

**mechanical equipment** includes: spray painting equipment, compressors, abrasive blast equipment, dust collectors, industrial vacuums, air monitoring systems, ventilation equipment, air dryers, air coolers, water separators, intrinsically-safe equipment

**maintain** includes: check fluid levels, lubricate, check for wear, top-up fluids, tire-pressure monitoring

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## **A-2.04** Uses rigging, hoisting and lifting equipment

### **Performance Criteria**

2.04.01	select, set up and use <b>rigging, hoisting and lifting equipment</b>
2.04.02	secure area
2.04.03	determine load to be lifted
2.04.04	inspect rigging, hoisting and lifting equipment for wear, damage, defects and certification date
2.04.05	perform rigging, hoisting and lifting operations
2.04.06	recognize, tag, report, remove from service and replace worn, damaged, expired or defective rigging, hoisting and lifting equipment
2.04.07	lubricate moving parts of motorized hoisting and lifting equipment
2.04.08	organize, maintain and store rigging, hoisting and lifting equipment

### **Range of Variables**

**rigging, hoisting and lifting equipment** includes: forklifts, chain hauls, pulleys, overhead cranes, tuggers, shackles, cable slings, web slings, chain slings, hooks, swivel rings

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## **A-2.05** Uses access equipment

### **Performance Criteria**

2.05.01	select, set up and use <b>access equipment</b>
2.05.02	inspect access equipment for wear, damage, defects and certification date
2.05.03	recognize, tag, report, remove from service, repair or replace worn, damaged, expired or defective access equipment
2.05.04	position access equipment
2.05.05	organize, maintain and store access equipment

### **Range of Variables**

**access equipment** includes: scaffolding, mobile elevated work platforms (MEWP), temporary stair towers, rope access, boatswain chairs, ladders, swing stages

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**A-2.06****Uses measuring, monitoring and testing equipment****Performance Criteria**

- 2.06.01 select, set up and use **measuring, monitoring and testing** equipment
- 2.06.02 inspect and clean measuring, monitoring and testing equipment
- 2.06.03 perform measurements and calculations
- 2.06.04 sample and test measuring, monitoring and testing equipment for calibration
- 2.06.05 calibrate measuring, monitoring and testing equipment
- 2.06.06 verify calibration for measuring, monitoring and testing equipment
- 2.06.07 organize, maintain and store measuring, monitoring and testing equipment

**Range of Variables**

**measuring** includes: ambient condition meters, dry-film thickness (DFT) meters, wet-film thickness (WFT) gauges, moisture meters, calcium chloride tests, substrate profile measuring equipment, sling psychrometers

**monitoring** includes: gas monitors, breathing air monitors, data loggers

**testing** includes: holiday testers, adhesion testing equipment

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**TASK A-3 Organizes work**

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**Task Descriptor**

Industrial Coatings Applicators organize their work by using trade related documentation, determining project requirements, planning jobs, interpreting drawings and specifications, and handling materials.

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**A-3.01****Uses documentation****Performance Criteria**

- 3.01.01 organize, complete and interpret **documentation**
- 3.01.02 organize, complete and interpret **safety and environmental documentation**
- 3.01.03 compile and store documentation
- 3.01.04 analyze, interpret and communicate results
- 3.01.05 utilize software

**Range of Variables**

**documentation** includes: manufacturers' specifications, site-specific documents, drawings, permits, work orders, contracts, technical data sheets, equipment maintenance documents

**safety and environmental documentation** includes: safety data sheets (SDS), hazardous materials logs, safe work procedures (SWP), job safety analysis (JSA)

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## **A-3.02** Plans project

### **Performance Criteria**

- |         |   |
|---------|---|
| 3.02.01 | determine substrate area requirements                                     |
| 3.02.02 | obtain substrate sample for testing                                       |
| 3.02.03 | calculate time, labour and <b>material</b> requirements                   |
| 3.02.04 | apply for and obtain permits  |
| 3.02.05 | determine tools and equipment   |
| 3.02.06 | determine and verify area layout requirements                             |
| 3.02.07 | select on-site equipment layout location                                  |
| 3.02.08 | determine availability of <b>utilities</b>                                |
| 3.02.09 | determine ventilation requirements  |
| 3.02.10 | determine method of application   |
| 3.02.11 | determine, verify and monitor <b>environmental condition</b> requirements |
| 3.02.12 | determine job <b>specifications and standards</b>                         |
| 3.02.13 | determine <b>product specifications</b>                                   |
| 3.02.13 | perform job <b>safety analyses</b>  |

### **Range of Variables**

**material** includes: paint, masking, drop sheets

**utilities** include: heating, electricity, water

**environmental condition** includes: substrate temperature, relative humidity, wind, ambient temperature, dew point

**specifications and standards** includes NACE, SSPC, ASTM, AMPP, ISO

**product specifications** include: overcoat windows, cure times, induction times

**safety analyses** include: job safety analysis (JSA), field-level risk assessments (FLRA)

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## **A-3.03** Interprets drawings and specifications

### **Performance Criteria**

- 3.03.01 locate and interpret information on **drawings and specifications**
- 3.03.02 identify symbols and units of measurement
- 3.03.03 convert between metric and imperial units of measurement
- 3.03.04 determine location of equipment and devices
- 3.03.05 determine equipment specifications
- 3.03.06 locate and cross-reference information on plans, drawings, specifications and contract documents
- 3.03.07 visualize finished product based on information in plans, drawings and specifications
- 3.03.08 determine if plans, drawings and specifications are current

### **Range of Variables**

**drawings and specifications** include: civil (site), architectural, mechanical, structural, electrical, shop

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## **A-3.04** Handles materials and supplies

### **Performance Criteria**

- 3.04.01 select, inspect and use material handling tools and equipment
- 3.04.02 receive and inspect **materials and supplies**
- 3.04.03 organize, maintain and store materials and supplies
- 3.04.04 transport materials and supplies
- 3.04.05 dispose of materials including **hazardous materials**
- 3.04.06 identify and report **designated substances**

### **Range of Variables**

**materials and supplies** include: paints, coatings, solvents, abrasives

**hazardous materials** include: asbestos, lead paints, algacides

**designated substances** include: acrylonitrile, arsenic, asbestos, benzene, coke oven emissions, ethylene oxide, isocyanates, lead (in lead-based paints), mercury, silica, vinyl chloride (in polyvinylchloride-PVC), styrene

## **Task A-4 Performs Routine Trade Activities**

### **Task Descriptor**

Industrial Coatings Applicators perform routine trade activities including protecting surroundings, masking, performing quality control assessments and performing post-application procedures.

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## **A-4.01** Protects surroundings

### **Performance Criteria**

- 4.01.01 select, inspect and use tools, equipment and materials
- 4.01.02 erect enclosures around work areas using **protective products**
- 4.01.03 prevent overspray, abrasive blast media and fugitive dust egress
- 4.01.04 set up **controls** to prevent environmental contamination
- 4.01.05 wear **protective clothing** to prevent contamination
- 4.01.06 disassemble enclosures
- 4.01.07 store or dispose of protective products

### **Range of Variables**

**protective products** include: plywood, polyethylene tarps, caution tape, signage, nets, scaffolding, lumber, corrugated plastic sheeting

**controls** include: ventilation systems, filtration systems, water diversion systems

**protective clothing** includes: disposable booties, disposable coveralls, hoods, gloves

---

## **A-4.02** Masks objects, equipment and substrates

### **Performance Criteria**

- 4.02.01 select, inspect and use tools, equipment and materials
- 4.02.02 mask **surrounding objects, equipment and substrates**
- 4.02.03 create and maintain patterns
- 4.02.04 ensure adhesion control
- 4.02.05 prevent overspray
- 4.02.06 protect sensitive **equipment and components**

### **Range of Variables**

**surrounding objects, equipment and substrates** include: flooring, lighting fixtures, motion detectors, hardware, emergency pull stations, electronics, wall plates, fixtures, windows, door frames, furnishings

**equipment and components** includes: HVAC, pumps, electrical panels, hydraulics, bearings, valves, motors

---

## **A-4.03** Performs post-application procedures

### **Performance Criteria**

- 4.03.01 verify specification compliance
- 4.03.02 perform **worksite clean-up**
- 4.03.03 remove and dispose hazardous materials
- 4.03.04 remove, organize, maintain and store equipment

### **Range of Variables**

**worksite clean-up** includes: remove cover-ups, disassemble hoarding structures, remove masking

---

## **A-4.04** Performs quality control assessments

### **Performance Criteria**

- 4.04.01 determine, verify and monitor **environmental condition** requirements
- 4.04.02 determine **substrate contaminant** levels
- 4.04.03 monitor substrate temperatures
- 4.04.04 determine substrate profile requirements
- 4.04.05 perform **destructive tests**
- 4.04.06 perform **non-destructive tests**

### **Range of variables**

**environmental condition** includes: substrate temperature, relative humidity, wind, ambient temperature, dew point

**substrate contaminant** includes: organic, inorganic, chemical, particulate

**destructive tests** include: adhesion tests, hardness tests

**non-destructive tests** include: wet film thickness, dry film thickness, holiday tests, surface profile tests, surface contamination tests

---

## **TASK A-5 Uses communication and mentoring techniques**

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### **Task Descriptor**

Learning in the trades is done primarily in the workplace with tradespeople passing on their skills and knowledge to apprentices, as well as sharing knowledge among themselves. Apprenticeship is, and always has been about mentoring - learning workplace skills and passing them on. Because of the importance of this to Industrial Coatings Applicators, this task covers the activities related to communication in the workplace and mentoring skills.

---

## **A-5.01** Uses communication techniques

### **Performance Criteria**

- 5.01.01 demonstrate **communication practices** individually or in a group
- 5.01.02 use **active listening** practices
- 5.01.03 speak clearly using correct industry terminology to ensure understanding
- 5.01.04 receive and respond to instructions
- 5.01.05 receive and respond to feedback on work completed or performed
- 5.01.06 explain and provide feedback
- 5.01.07 use questions to improve communication
- 5.01.08 conduct and participate in safety and information meetings
- 5.01.09 send and receive electronic messages

### **Range of Variables**

**communication practices** include: verbal communication techniques, written communication techniques, electronic communication techniques, hand signal techniques

**active listening** includes: hearing, interpreting, reflecting, responding, paraphrasing, questioning

---

## **A-5.02** Uses mentoring techniques

### **Performance Criteria**

- 5.02.01 identify and communicate learning objective and point of lesson
- 5.02.02 link lesson to other lessons and project
- 5.02.03 demonstrate performance of a skill to an apprentice
- 5.02.04 set up conditions required for apprentice to practice a skill
- 5.02.05 assess an apprentice's ability to perform tasks with increasing independence
- 5.02.06 give supportive and corrective feedback
- 5.02.07 support apprentices in pursuing technical training opportunities
- 5.02.08 support anti-**harassment** and anti-**discrimination** practices in workplace
- 5.02.09 assess an apprentice's suitability to the trade during probationary period

### **Range of Variables**

**harassment**: as defined by the Canadian and jurisdictional Human Rights Commissions

**discrimination**: as defined by the Canadian Human Rights Act and jurisdictional human rights laws

# MAJOR WORK ACTIVITY B

## Prepares substrates

### TASK B-6 Performs general substrate preparation

#### Task Descriptor

Industrial Coatings Applicators prepare substrates by chemical and mechanical means using power tools, hand tools, abrasive blasting equipment along with other methods. They prepare substrates to ensure the proper adhesion of primer and successive coats to ensure the longevity of coatings.

#### B-6.01 Performs initial assessment

##### Performance Criteria

- 6.01.01 select, inspect and use tools and equipment
- 6.01.02 perform visual assessment
- 6.01.03 identify existing coatings
- 6.01.04 obtain sample for testing
- 6.01.05 identify **substrate contaminants**
- 6.01.06 identify **substrate imperfections**
- 6.01.07 determine job specifications and standards
- 6.01.08 perform a field level risk assessment (FLRA)

##### Range of Variables

**substrate contaminants** include: organic, inorganic, chemical, particulate

**substrate imperfections** include: mill scale, loose rust, loose paint, pitting, burrs, laminations, weld spatter

---

## **B-6.02**    **Cleans substrate**

### **Performance Criteria**

- 6.02.01      select, inspect and use cleaning **tools and equipment**
- 6.02.02      determine, verify and monitor environmental condition requirements
- 6.02.03      determine **cleaning procedures** to follow
- 6.02.04      perform cleaning procedures to remove detrimental residues
- 6.02.05      inspect substrate to **verify cleanliness**

### **Range of Variables**

**tools and equipment** includes: dust brushes, brooms, vacuums, pressure washers, dust collectors, cloths, degreasers

**cleaning procedures** include: contaminate-free water rinsing, wiping substrates, degreasers, pressure washing, steam cleaning

**verify cleanliness** includes: perform chloride tests, uniform appearance, dust tests, visual contamination inspections

---

## **B-6.03**    **Applies caulking**

### **Performance Criteria**

- 6.03.01      select, inspect and use **caulking** and **tools and equipment**
- 6.03.02      determine, verify and monitor environmental condition requirements
- 6.03.03      prepare substrate for caulking
- 6.03.04      caulk substrate

### **Range of Variables**

**caulking** includes: silicone, acrylic, latex, polyurethane, fire-retardant

**tools and equipment** includes: pneumatic caulking guns, dual-cartridge caulking guns, sausage caulking guns

---

## **B-6.04 Abrades substrates**

### **Performance Criteria**

- 6.04.01 select, inspect and use abrading **tools and equipment**
- 6.04.02 determine, verify and monitor environmental condition requirements
- 6.04.03 inspect substrate for contaminants
- 6.04.04 remove substrate contaminants
- 6.04.05 inspect substrate to verify cleanliness
- 6.04.06 abrade substrate

### **Range of Variables**

**tools and equipment** includes: wheelabrators, abrasive blast equipment, scarifiers, bristle blasters, sandpaper, die grinders, angle grinders, palm sanders

---

## **B-6.05 Protects surrounding areas**

### **Performance Criteria**

- 6.05.01 select, inspect and use **tools, equipment and materials**
- 6.05.02 verify environmental regulations
- 6.05.03 conduct hazard assessments
- 6.05.04 create hoarding and containment structures around work areas
- 6.05.05 set up debris nets and ground containment tarps
- 6.05.06 establish **safety perimeters**

### **Range of Variables**

**tools, equipment and materials** include: scaffolding, tarps, nets, hammers, straps, tie-downs, access equipment, plastic corrugated boards

**safety perimeters** include: caution tape, danger tape, traffic cones, barricades

---

## **B-6.06 Removes coatings and contaminants**

### **Performance Criteria**

- 6.06.01 select, inspect and use tools and equipment
- 6.06.02 determine **removal procedure**
- 6.06.03 determine, verify and monitor environmental condition requirements
- 6.06.04 remove contaminants from substrate
- 6.06.05 inspect substrate for cleanliness
- 6.06.06 remove coatings from substrate

### **Range of Variables**

**removal procedure** includes: laser ablation, abrasive blasting, power tool removal, hand tool removal, chemical coating removal, ultra-high pressure (UHP) water-jetting, vapour blasting

---

## **B-6.07 Performs pre-repair inspection**

### **Performance Criteria**

- 6.07.01 verify condition of substrate
- 6.07.02 identify **substrate defects**
- 6.07.03 identify signs of asbestos, mould or lead
- 6.07.04 determine, verify and monitor environmental condition requirements
- 6.07.05 identify surface contaminants

### **Range of Variables**

**substrate defects** includes: burrs, crevices, loose paint, porosity, mill scale, laminations, sharp edges, pitting, corrosion, weld spatter, weld slag, weld undercut, foreign matter

---

## **TASK B-7 Prepares metal substrates**

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### **Task Descriptor**

Industrial Coatings Applicators prepare metal substrates to make substrates suitable for application of coatings. This includes cleaning with abrasive blasting, power equipment and hand tools.

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## **B-7.01 Mechanically prepares metal substrates**

### **Performance Criteria**

- 7.01.01 select, inspect and use mechanical **tools and equipment**
- 7.01.02 determine, verify and monitor environmental condition requirements
- 7.01.03 verify substrate conditions
- 7.01.04 identify **substrate defects**
- 7.01.04 remove **contaminants** from substrate
- 7.01.05 inspect substrate for cleanliness
- 7.01.06 remove coatings from substrate
- 7.01.07 **mechanically prepare** substrate
- 7.01.08 verify profile requirements

### **Range of Variables**

**tools and equipment** includes: angle grinders, die grinders, pneumatic needle scalers, belt sanders, palm sanders, deck scalers, powered chippers, bristle blasters, abrasive blast equipment

**substrate defects** includes: burrs, crevices, loose paint, porosity, mill scale, laminations, sharp edges, pitting, corrosion, weld spatter, weld slag, weld undercut, foreign matter

**contaminants** includes: hydrocarbons, chloride, animal waste

**mechanically prepare** includes: abrasive blast, laser ablation, ultra-high pressure (UHP) water-jetting, vapour blast, dry-ice blast, vacuum blast, wheelabrator, heat induction

---

## **B-7.02 Chemically treats metal substrates**

### **Performance Criteria**

- |         |  |
|---------|--|
| 7.02.01 | determine <b>chemical treatment</b> methods                        |
| 7.02.02 | select, inspect and use tools and equipment                        |
| 7.02.03 | determine, verify and monitor environmental condition requirements |
| 7.02.04 | verify substrate conditions  |
| 7.02.05 | identify substrate defects   |
| 7.02.06 | remove contaminants from substrate                                 |
| 7.02.07 | <b>chemically remove</b> coating                                   |
| 7.02.08 | inspect substrate for cleanliness                                  |
| 7.02.09 | verify profile requirements  |

### **Range of Variables**

**chemical treatment** includes: etching, pH adjustment, oxidation, pickling, galvanizing

**chemically remove** includes: alkalis, acids, methylene chloride, solvents

---

## **B-7.03** Repairs metal substrates

### **Performance Criteria**

7.03.01	determine repair method
7.03.02	select, inspect and use tools and equipment
7.03.03	determine, verify and monitor environmental condition requirements
7.03.04	verify substrate condition
7.03.05	remove contaminants from substrate
7.03.06	mix and apply epoxy filling compounds
7.03.07	inspect substrate for cleanliness
7.03.08	repair substrate damage
7.03.09	verify profile requirements

### **Range of Variables**

N/A

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## **TASK B-8** Prepares concrete substrates

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### **Task Descriptor**

Industrial Coatings Applicators prepare concrete substrates using mechanical and chemical treatments to make substrates suitable for application of coatings and to expose aggregate. This includes repairing minor imperfections and filling cracks, gaps and holes.

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## **B-8.01** Mechanically prepares concrete substrates

### **Performance Criteria**

8.01.01	select, inspect and use concrete substrate <b>tools and equipment</b>
8.01.02	determine, verify and monitor environmental condition requirements
8.01.03	maintain required profile on substrate
8.01.04	test areas for hardness, moisture, contaminants and profile depth

### **Range of Variables**

**tools and equipment** include: grinders, needle guns, wire brushes, chisels, pressure washers, floor wheelabrators, scrapers, scarifiers, abrasive blasting

---

## **B-8.02** Repairs concrete substrates

### Performance Criteria

- 8.02.01 select, inspect and use concrete substrate **tools and equipment**
- 8.02.02 identify **concrete substrate repair materials** that are compatible with coating material
- 8.02.03 repair concrete substrate **imperfections**
- 8.02.04 abrade surface and verify profile requirements

### Range of Variables

**tools and equipment** include: grinders, hand trowels, power trowels, mixing drills, screed boxes, hammer guns, needle guns, wire brushes, chisels, pressure washers, floor wheelabrators, scrapers, scarifiers, laser levels, abrasive blast equipment

**concrete substrate repair materials** include: grouting compounds, epoxies, caulking, backing rods

**imperfections** include: cracks, gaps, tie rod holes, honeycombs, efflorescence, foreign debris, saponification

---

## **TASK B-9** Prepares synthetic substrates

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### **Task Descriptor**

Industrial Coatings Applicators prepare synthetic substrates to make substrates suitable for application of coatings. This includes cleaning with abrasive blasting, power equipment and hand tools.

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## **B-9.01** Mechanically prepares synthetic substrates

### Performance Criteria

- 9.01.01 select, inspect and use tools and **synthetic substrate equipment**
- 9.01.02 determine, verify and monitor environmental condition requirements
- 9.01.03 verify substrate condition
- 9.01.04 identify substrate defects
- 9.01.05 remove contaminants from substrate
- 9.01.06 inspect substrate for cleanliness
- 9.01.07 remove coatings from substrate
- 9.01.08 verify profile requirements

### Range of Variables

**synthetic substrate equipment** includes: chopper guns, gel coaters, steel rollers

---

**B-9.02****Chemically treats synthetic substrates****Performance Criteria**

9.02.01	determine <b>chemical treatment methods</b>
9.02.02	select, inspect and use tools and equipment
9.02.03	determine, verify and monitor environmental condition requirements
9.02.04	identify substrate and verify condition
9.02.05	identify substrate defects
9.02.06	remove contaminants from substrates
9.02.07	chemically remove coatings
9.02.08	chemically etch substrates
9.02.09	inspect substrate for cleanliness
9.02.10	verify profile requirements

**Range of Variables**

**chemical treatment** includes: acetone, butanone

**methods** include: grinding, scraping, wire brushes, spray equipment

---

**B-9.03****Repairs synthetic substrates****Performance Criteria**

9.03.01	determine repair methods
9.03.02	select, inspect and use tools and equipment
9.03.03	determine, verify and monitor environmental condition requirements
9.03.04	identify substrate and verify condition
9.03.05	identify substrate damage
9.03.06	remove contaminants from substrates
9.03.07	mix and apply epoxy filling compounds
9.03.08	inspect substrate for cleanliness
9.03.09	repair substrate damage
9.03.10	verify profile requirements

**Range of Variables**

N/A

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## TASK B-10 Prepares wood substrates

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### Task Descriptor

Industrial Coatings Applicators prepare wood substrates to make substrates suitable for application of coatings.

### B- 10.01

#### Mechanically prepares wood substrates

##### Performance Criteria

- 10.01.01 select, inspect and use tools and equipment
- 10.01.02 determine, verify and monitor environmental condition requirements
- 10.01.03 verify substrate condition
- 10.01.04 identify **wood substrate defects**
- 10.01.05 remove **wood contaminants** from substrate
- 10.01.06 inspect substrate for cleanliness
- 10.01.07 remove coatings from substrate

##### Range of Variables

**wood contaminants** includes: oils, salts, animal waste, moisture, marine growth, sawdust

**wood substrate defects** includes: knots, sap, gouges, cracks, rot, swelling

### B- 10.02

#### Chemically treats wood substrates

##### Performance Criteria

- 10.02.01 determine **chemical treatment methods**
- 10.02.02 select, inspect and use tools and equipment
- 10.02.03 determine, verify and monitor environmental condition requirements
- 10.02.04 identify substrate and verify condition
- 10.02.05 identify substrate defects
- 10.02.06 remove contaminants from substrates
- 10.02.07 chemically remove coatings
- 10.02.08 inspect substrate for cleanliness

##### Range of Variables

**chemical treatment** includes: acetone, methyl hydrate, biocides

**methods** include: grinding, scraping, wire brushes, spray equipment

**B-  
10.03****Repairs wood substrates****Performance Criteria**

10.03.01	select, inspect and use tools and equipment
10.03.02	replace rotted or damaged wood
10.03.03	fill minor imperfections
10.03.04	inspect and repair substrate

**Range of Variables**

N/A

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**MAJOR WORK ACTIVITY C****Performs hazardous material (HAZMAT)  
abatement**

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**TASK C-11 Prepares for hazardous material (HAZMAT) removal**

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**Task Descriptor**

Industrial Coatings Applicators must ensure all necessary precautions and preparations are in place for the safe removal of hazardous materials. This includes setting up the site and securing the area.

**C-11.01****Prepares for hazardous material removal****Performance Criteria**

11.01.01	determine level of risk
11.01.02	select PPE
11.01.03	retrieve sample
11.01.04	interpret lab results
11.01.05	conduct air quality assessment
11.01.06	isolate and restrict access to sampling area
11.01.07	document sampling information
11.01.08	identify and construct temporary enclosure
11.01.09	determine amount of hazardous material to be abated or remediated
11.01.10	determine disposal method of contaminated waste

## Range of Variables

N/A

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### **C-11.02** Prepares site

#### Performance Criteria

- 11.02.01 determine requirements for decontamination
- 11.02.02 install signage and barricades
- 11.02.03 pre-clean work area
- 11.02.04 plan access routes for personnel movement and HAZMAT disposal
- 11.02.05 display documentation of hazard assessment
- 11.02.06 construct sealed containment area
- 11.02.07 install critical barriers
- 11.02.08 set up and maintain decontamination facilities
- 11.02.09 determine installation location for negative air and ventilation equipment
- 11.02.10 install negative air and ventilation equipment

## Range of Variables

N/A

---

## **TASK C-12 Performs Hazardous Materials (HAZMAT) removal**

---

### **Task descriptor**

Industrial Coatings Applicators remove hazardous coatings and materials, such as lead based paint, mould or asbestos, while ensuring strict compliance with safety, environmental and regulatory standards.

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### **C-12.01** Performs lead abatement

#### Performance Criteria

- 12.01.01 determine **lead abatement method**
- 12.01.02 verify scope of lead abatement and disturbance
- 12.01.03 select, inspect and use lead abatement **tools and equipment**
- 12.01.04 select and use **HAZMAT PPE**
- 12.01.05 remove identified lead
- 12.01.06 complete lead disposal
- 12.01.07 follow area, equipment and personnel decontamination procedures
- 12.01.08 inspect and verify abatement completion
- 12.01.09 restore worksite to original condition

### **Range of Variables**

**lead abatement method** includes: chemical removal, hand and power tool removal, laser ablation, abrasive blasting, ultra high-pressure (UHP) water-jetting, HEPA vacuum-aided power tool removal, vacuum blasting

**tools and equipment** includes: HEPA vacuums, scrapers, chipping hammers, laser ablaters, power tools

**HAZMAT PPE** includes: disposable coveralls, head and foot protection, gloves, respiratory protection equipment, ear plugs, sealed eye protection

---

## **C-12.02**      **Performs mould remediation**

### **Performance Criteria**

- 12.02.01      determine **mould remediation method**
- 12.02.02      verify the scope of mould remediation and disturbance
- 12.02.03      select, inspect and use mould remediation tools and equipment
- 12.02.04      select and use **HAZMAT PPE**
- 12.02.05      disinfect substrate
- 12.02.06      dispose of mould contaminated material
- 12.02.07      follow area, equipment and personnel decontamination procedures
- 12.02.08      inspect and verify remediation completion
- 12.02.09      restore worksite to original condition

### **Range of Variables**

**mould remediation method** includes: wet vacuum, HEPA vacuum, discard method, chemical disinfection

**HAZMAT PPE** includes: disposable coveralls, head and foot protection, gloves, respiratory protection equipment, ear plugs, sealed eye protection

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## **C-12.03**      **Performs asbestos abatement**

### **Performance Criteria**

- 12.03.01      verify **classification of asbestos abatement**
- 12.03.02      determine asbestos abatement method
- 12.03.03      select, inspect and use asbestos abatement **tools and equipment**
- 12.03.04      select and use **HAZMAT PPE**
- 12.03.05      remove identified asbestos
- 12.03.06      complete asbestos disposal
- 12.03.07      follow area, equipment and personnel decontamination procedures
- 12.03.08      inspect and verify abatement completion

- 12.03.01 verify **classification of asbestos abatement**
- 12.03.09 remove and dispose of temporary enclosures
- 12.03.10 restore worksite to original condition

### **Range of Variables**

**classification of asbestos abatement** includes: type I, type II, type III

**tools and equipment** includes: HEPA vacuums, scrapers, chipping hammers, disposal bags, signage, barricade tape, nail extractors, crowbars, six-in-one tools

**HAZMAT PPE** includes: disposable coveralls, head and foot protection, gloves, respiratory protection equipment, ear plugs, sealed eye protection

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## **MAJOR WORK ACTIVITY D**

### **Prepares and applies coatings and mastics**

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#### **TASK D-13 Applies coatings**

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#### **Task Descriptor**

Industrial Coatings Applicators must prepare for the application of industrial paints and coatings by storing, mixing, thinning, heating and agitating them. They also apply primers and coatings using both hand tools and spray equipment.

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#### **D-13.01 Primes substrates**

#### **Performance Criteria**

- 13.01.01 select, inspect and use coating **tools and equipment**
- 13.01.02 determine, verify and monitor environmental condition requirements
- 13.01.03 determine and verify film thickness requirements
- 13.01.04 determine **mix requirements**
- 13.01.05 verify substrate preparation
- 13.01.06 acclimatize coatings
- 13.01.07 mix coatings
- 13.01.08 apply primers

#### **Range of Variables**

**tools and equipment** includes: pneumatic paddles, measuring scale mixing rulers, mechanical mixers, spray pumps, brushes, rollers

**mix requirements** includes: ratios, pot life, induction times, additives

---

## **D-13.02** Prepares coatings

### **Performance Criteria**

- 13.02.01 select, inspect and use coating tools and equipment
- 13.02.02 determine, verify and monitor environmental condition requirements
- 13.02.03 determine mix requirements
- 13.02.04 verify **coating characteristics**
- 13.02.05 acclimatize coatings
- 13.02.06 mix coatings

### **Range of Variables**

**coating characteristics** includes: pot life, induction times, climatize, chemical resistance, UV resistance

---

## **D-13.03** Applies coatings with hand tools

### **Performance Criteria**

- 13.03.01 select, inspect and use hand **tools and equipment**
- 13.03.02 determine, verify and monitor environmental condition requirements
- 13.03.03 determine and verify film thickness requirements
- 13.03.04 apply coating systems
- 13.03.05 inspect and verify coating requirements

### **Range of Variables**

**tools and equipment** includes: brushes, rollers

---

## **D-13.04** Applies coatings with spray equipment

### **Performance Criteria**

- 13.04.01 select, inspect and use spray **tools and equipment**
- 13.04.02 determine, verify and monitor environmental condition requirements
- 13.04.03 select and use spray tips
- 13.04.04 determine and verify film thickness requirements
- 13.04.05 determine mix requirements
- 13.04.06 mix coatings
- 13.04.07 verify pump pressure settings
- 13.04.08 use spray application techniques

- 13.04.01 select, inspect and use spray **tools and equipment**
- 13.04.09 inspect and verify coating requirements

### **Range of Variables**

**tools and equipment** includes: airless pumps, air-assisted airless pumps, high-volume low-pressure pumps (HVLP), conventional pressure pots

---

## **TASK D-14 Applies specialty coatings and mastics**

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### **Task Descriptor**

Industrial Coatings Applicators specialize in applying specialty coatings and mastics, including liquid, powder and thermal sprays. They also ensure the quality of these coatings meets standards, providing the necessary protection and functionality.

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### **D-14.01 Applies thermal sprays**

#### **Performance Criteria**

- 14.01.01 select, inspect and use thermal spray **tools and equipment**
- 14.01.02 determine, verify and monitor environmental condition requirements
- 14.01.03 select thermal spray materials
- 14.01.04 determine and verify film thickness requirements
- 14.01.05 use thermal spray application techniques
- 14.01.06 apply sealant
- 14.01.07 inspect and verify coating requirements
- 14.01.08 inspect and verify thermal spray installation requirements

### **Range of Variables**

**tools and equipment** includes: thermal arc spray, thermal flame spray

---

### **D-14.02 Installs lining systems**

#### **Performance Criteria**

- 14.02.01 select, inspect and use lining system **tools and equipment**
- 14.02.02 determine, verify and monitor environmental condition requirements
- 14.02.03 determine and verify film thickness requirements
- 14.02.04 apply **lining systems**
- 14.02.05 verify installation of lining systems

- 14.02.01 select, inspect and use lining system **tools and equipment**
- 14.02.06 inspect and verify lining requirements

### **Range of Variables**

**tools and equipment** includes: spin blast equipment, centrifugal spray equipment

**lining systems** includes: fiber-reinforced linings, rubber linings, epoxy linings, ceramic linings, phenolic epoxy linings, novolac linings

---

## **D-14.03 Applies powder coatings**

### **Performance Criteria**

- 14.03.01 select, inspect and use powder coating tools and equipment
- 14.03.02 determine, verify and monitor environmental condition requirements
- 14.03.03 apply powder coatings
- 14.03.04 inspect and verify installation of powder coatings

### **Range of Variables**

N/A

---

## **D-14.04 Applies liquid coatings with plural components**

### **Performance Criteria**

- 14.04.01 select, inspect and use liquid coatings with plural components tools and equipment
- 14.04.02 determine, verify and monitor environmental condition requirements
- 14.04.03 determine and verify film thickness requirements
- 14.04.04 apply liquid coatings
- 14.04.05 inspect and verify application of liquid coatings

### **Range of Variables**

N/A

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## **D-14.05** Applies non-skid coatings

### Performance Criteria

- 14.05.01 select, inspect and use non-skid coatings **tools and equipment**
- 14.05.02 determine, verify and monitor environmental condition requirements
- 14.05.03 determine and verify area layout requirements
- 14.05.04 apply non-skid coatings
- 14.05.05 inspect and verify application of non-skid coatings

### Range of Variables

**tools and equipment** includes: phenolic rollers, hopper guns

---

## **D-14.06** Installs fibre-reinforced plastics

### Performance Criteria

- 14.06.01 select, inspect and use fibre-reinforced plastics **tools and equipment**
- 14.06.02 determine, verify and monitor environmental condition requirements
- 14.06.03 determine and verify area layout requirements
- 14.06.04 select materials
- 14.06.05 apply primer to substrate with profile
- 14.06.07 determine and verify thickness requirements
- 14.06.08 calculate and mix ratios of resin to catalyst
- 14.06.09 **apply fibre-reinforced plastics**
- 14.06.10 inspect and verify installation of fibre-reinforced plastics
- 14.06.11 apply final UV and water protection coating

### Range of Variables

**tools and equipment** includes: spray pumps, ribbed rollers, trowels

**apply fibre-reinforced plastics** includes: cut mat to fit substrate area, overlap mat to ensure complete coverage, saturate mat with resin, remove air bubbles

---

## **D-14.07** Installs seamless flooring systems

### Performance Criteria

- 14.07.01 select, inspect and use seamless flooring system **tools and equipment**
- 14.07.02 determine, verify and monitor environmental condition requirements
- 14.07.03 determine mix requirements

- 14.07.01 select, inspect and use seamless flooring system **tools and equipment**
- 14.07.04 mix multi-part products
- 14.07.05 apply seamless-flooring systems
- 14.07.06 inspect and verify installation of seamless-flooring systems

### **Range of Variables**

**tools and equipment** includes: mixing cups, trowels, drills, agitators, squeegees, spike shoes, porcupine rollers, scales

---

## **D-14.08 Installs intumescent fireproofing**

### **Performance Criteria**

- 14.08.01 select, inspect and use intumescent fireproofing **tools and equipment**
- 14.08.02 determine, verify and monitor environmental condition requirements
- 14.08.03 determine and verify area layout requirements
- 14.08.04 determine and verify film thickness requirements
- 14.08.05 apply primer to substrate with profile
- 14.08.06 apply intumescent fireproofing
- 14.08.07 inspect and verify application of intumescent fireproofing

### **Range of Variables**

**tools and equipment** includes: airless pumps, plural component pumps, whiz rollers, hawk and trowels

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## **D-14.09 Installs cementitious fireproofing**

### **Performance Criteria**

- 14.09.01 select, inspect and use cementitious fireproofing **tools and equipment**
- 14.09.02 determine, verify and monitor environmental condition requirements
- 14.09.03 determine and verify area layout requirements
- 14.09.04 determine and verify film thickness requirements
- 14.09.05 apply primer to substrate with profile
- 14.09.06 apply cementitious fireproofing
- 14.09.07 inspect and verify application of cementitious fireproofing

### **Range of Variables**

**tools and equipment** includes: airless pumps, hawk and trowels

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**D-14.10** Applies solid epoxy bonding compounds**Performance Criteria**

- 14.10.01 select, inspect and use solid epoxy bonding compounds **tools and equipment**
- 12.10.02 determine, verify and monitor environmental condition requirements
- 12.10.03 determine and verify area layout requirements
- 12.10.04 apply solid epoxy bonding compounds to substrate with profile
- 12.10.05 verify installation of solid epoxy bonding compounds

**Range of Variables**

**tools and equipment** includes: hawk and trowels, drills, paddles

# APPENDIX A: ACRONYMS

<b>AMPP</b>	Association for Materials Protection and Performance
<b>ANSI</b>	American National Standards Institute
<b>APR</b>	Air Purifying Respirator
<b>ASTM</b>	American Society for Testing and Materials
<b>CCUS</b>	Carbon capture, utilization and storage
<b>CFM</b>	Cubic feet per minute
<b>CFRP</b>	Carbon fibre-reinforced plastic
<b>CNZEAA</b>	Canadian Net-Zero Emissions Accountability Act
<b>CO</b>	Carbon monoxide
<b>DFT</b>	Dry film thickness
<b>EPA</b>	Environmental Protection Agency
<b>FLRP</b>	Field level risk assessment
<b>FRP</b>	Fibre-reinforced plastic
<b>HAZMAT</b>	Hazardous materials
<b>HEPA</b>	High-efficiency particulate air
<b>HVAC</b>	Heating, ventilation and air conditioning
<b>HVLP</b>	High volume-low pressure
<b>H<sub>2</sub>S</b>	Hydrogen Sulfide
<b>ICA</b>	Industrial Coatings Applicator
<b>ISO</b>	International Organization for Standardization
<b>JHA</b>	Job hazard analysis
<b>JSA</b>	Job safety analysis
<b>MEK</b>	Methyl ethyl ketone, strong flammable organic solvent
<b>MEWP</b>	Mobile elevating work platform
<b>MPI</b>	Master Painters Institute
<b>NACE</b>	National Association of Corrosion Engineers (see AMPP)
<b>NFPA</b>	National Fire Protection Association
<b>NIOSH</b>	National Institute of Safety and Hygiene
<b>OH&amp;S</b>	Occupational health and safety
<b>OSHA</b>	Occupational Safety and Health Administration
<b>PAPR</b>	Powered air purifying respirator
<b>PDS</b>	Product data sheet
<b>PPE</b>	Personal protective equipment

**PPM** Parts per million  
**PSI** Pounds per square inch  
**PVC** Polyvinyl chloride  
**SAR** Supplied air respirator  
**SCBA** Self contained breathing apparatus  
**SDS** Safety data sheet  
**SSPC** Society for Protective Coatings (see AMPP)  
**SWP** Safe work policy  
**T&M** Time and materials  
**TDG** Transportation of dangerous goods  
**TLV** Threshold limit value  
**TSP** Trisodium phosphate  
**UHP** Ultra-high pressure  
**UV** Ultraviolet  
**VOC** Volatile organic compound  
**WFT** Wet film thickness  
**WHMIS 2015** Workplace hazardous materials information system  
**WHSR** workplace health and safety regulations

# APPENDIX B: TOOLS AND EQUIPMENT

## Personal Protective Equipment (PPE) and Safety Equipment

air conditioners/heaters for fresh air hood  
air purifiers  
barricade tape  
blast-spray hood  
coveralls  
disposable coveralls  
dust masks  
ear protection  
exhaust fan  
eye protection  
eye wash facilities  
face shields  
fall arrest equipment  
fire blankets  
fire extinguishers  
fire hoses  
first aid equipment  
full body harness  
fresh air hood  
fume and toxic gas detector  
gloves  
goggles  
hard hat  
high-efficiency particulate air (HEPA) air filters (respirators, exhaust fans, vacuums)  
knee pads  
lanyards  
latex gloves  
respirators (APR, PAPR)  
rope grabs  
safety glasses  
safety lines  
safety vest  
self-contained breathing apparatus (SCBA)  
signage  
spill kits  
steel toed boots  
toe guards  
two-way radios  
warning tapes

## **Hand Tools**

air hose repair kits  
aprons  
broad knives  
brooms  
brush and roller spinners  
brush extenders  
brushes (various types of natural (animal hair) and synthetic bristle brushes and various types of handles)  
can hooks  
caulking guns  
cheese cloths  
chisels  
cloths  
cutters  
drop sheets  
duct tape  
dust brushes  
dust pans  
dusters  
extension poles  
files  
hammers (chipping, ball peen)  
hand masking machine  
hexagon keys  
levels and lasers  
masking tape  
measuring scale mixing rulers  
measuring tape  
nets  
nut drivers  
pails  
paint mitts  
paint pads  
paint strainer  
pencils  
pliers  
pole sanders  
porcupine rollers  
putty knives  
rags  
roller cages  
roller grids

roller sleeves  
sanding blocks  
sanding sponges  
sandpaper  
scrapers  
screwdrivers  
shovels  
spiked (porcupine) rollers  
spiked shoes  
sponges  
squeegees  
stir sticks  
straight edge  
straps  
tack cloths  
tarps/containments  
tie-downs  
trays  
trowels  
utility knives  
wire brushes  
wrenches (adjustable, various sizes)

### **Power Tools and Pneumatic Tools**

air chisels/chippers/scrapers  
air dryers  
bristle blaster  
chopper guns  
compressors  
deck scalers  
dehumidifiers  
drills  
dust collectors  
fans  
grinders (angle, die)  
hand-held bristle tool  
heat guns  
hopper guns  
laser ablation equipment  
lighting (explosion-proof, halogen, LED)  
mixers (mechanical, pneumatic)  
needle scalers  
paint agitators  
phenolic rollers

plotters  
pneumatic caulking guns (single-cartridge, dual-cartridge, sausage)  
power trowels  
pneumatic mixers  
pressure feed rollers  
pressure washers  
pneumatic paddles  
pressurized blasting equipment and components: deadman switches (electric or air), nozzles (venturi, straight bore), blast cabinets, blasting pots, blast hoses, blasting hoods, hydroblast equipment, centrifugal blasting equipment  
ribbed rollers  
rotary peelers  
sanders (palm, belt)  
scarifiers  
vacuum cleaners (with HEPA filters)  
vapour blaster  
wheel abraders

### **Spray Equipment**

air-assisted airless spray  
airless spray equipment (electric and internal combustion)  
conventional spray equipment  
electrostatic spray equipment  
HVLP spray equipment  
plural component spray pumps  
power rollers spray equipment components (compressors, inline heaters, pump filters, spray gun extensions, spray guns, spray lines, spray tips, washers and housing, spray whips and swivels, etc.)  
spray hoods  
thermal spray equipment (arc, flame)

### **Measuring and Testing Equipment**

adhesion testing equipment  
air monitoring equipment  
ambient condition meter  
blotter test kit  
calcium chloride test  
calculator  
clear tape (contaminant tester)  
coating temperature probe  
data logger  
digital temperature gun  
dry film thickness meter (DFT meter)

gas monitors  
holiday detector  
humidity meter  
lead test kit  
measuring cup  
measuring tape  
moisture meter  
profile gauge/replica tape  
pull test kit  
salt test kit  
sling psychrometer  
thermometers  
viscosity cup  
wet film thickness gauge (WFT gauge)

### **Access Equipment and Rigging, Hoisting and Lifting Equipment**

aerial work platforms (boom and scissor lift)  
beam rollers  
boatswain's chair (boson's chair)  
grounding equipment  
ladder jacks  
ladders  
mechanical scaffolds  
platforms  
rigging components (straps, slings, chains and shackles, karabiners, turnbuckles)  
rolling scaffold  
rope access equipment  
scaffolding components (stirrups, planks, outriggers and cross braces)  
swing stages  
stationary scaffolds  
suspended access systems

## APPENDIX C: GLOSSARY

**abrasive** material used for abrasive blast cleaning, for example, steel shot, sand and grit

**abrasive blasting** process used to clean a surface or create a profile with abrasive media such as sand, steel shot, beads, glass, soda or walnut shells etc..

**accelerator** a catalyst such as a chemical material which accelerates the hardening of certain coatings

**acclimatize** bringing a product to ambient temperature before use

**acrylic latex paint** water-thinned paint which employs synthetic acrylic resin as most of the binder

**acrylic resin** a clear resin derived from polymerised esters of acrylic acids and methacrylic acid, often used with water-based paints

**adhesion** adherence of a coating to the surface to which it is applied

**airless spraying** the process of atomization of paint by forcing it through an orifice at high pressure; the effect is often aided by the vaporization of the solvents

**air manifold** a device that allows common air supply to supply several lines

**alkali** caustic, strong base, such as sodium hydroxide

**alkyd paint** a coating which contains a synthetic alcohol-based resin

**alligatoring** paint film cracking that makes the surface look like alligator skin

**ambient temperature** the temperature of the air at a given time and in a particular place or circumstance

**amines** possible curing agent for epoxy resins

**anchor pattern** a profile or texture of a surface, usually attained by abrasive blasting

**angled sash brush** angled brush used for cutting-in

**antifouling coating** a coating with toxic material to prevent attachment and growth of marine fouling organisms

**binder** resin; a non-volatile vehicle; film forming portion of paint, such as oil, alkyd, latex emulsion, epoxy

**blistering** forming of bubbles or pimples on the painted surface; blistering is caused by moisture in the substrate, by paint having been applied before the previous coat was dry, and by excessive heat during or after application

**blooming** a cloudy, waxy, powdery, or hazy deposit appearing on the surface of a dried enamel or varnish film immediately after the film has dried and affecting the gloss of the film

**blushing** a defect that occurs during the drying or curing process because of condensation of moisture occurring on a coating surface and visible as water spot

**bonding** adhesion

**boxing** pouring two or more paints together to mix to achieve a consistent colour and viscosity

**broadcast** to sprinkle solid particles on a surface

**caking** hard settling of pigment from paint

**catalyst** additive added to base to chemically activate the paint or coating for the purpose of curing

**cementitious fireproof coating** also known as sprayed fire-resistant material (SFRM), is a fire protection method that involves applying a coating to a surface to protect it from fire damage

**chalking** powdering of surface of paint film

**checking** a kind of paint failure in which many small cracks appear on the surface of the paint

**coal tar-epoxy paint** a paint in which the binder or vehicle is a combination of coal tar with epoxy resin

**coatings** surface coverings; paints; barriers

**cohesion** the property of holding self together

**compatibility** ability to mix or adhere properly to other components or substances

**corrosion** oxidation of material; deterioration due to interaction with environment

**cracking** splitting, disintegration of paint by breaks through the film thickness

**curing agent** a hardener; promoter

**deadman valve** the valve at the blast nozzle for starting and automatic shutoff of abrasive flow

**degreaser** a chemical solvent or detergent for grease and oil removal

**delamination** separation and peeling of one or more layers of paint from an underlying substrate

**descaler** tool used to remove heavy scale

**detergent a** cleaning agent

**dew point** the temperature at which moisture condenses

**diluents** thinners; reducer

**doffing** taking off (an item of clothing or personal protective equipment (PPE))

**donning** putting on (an item of clothing or personal protective equipment (PPE))

**draw down** a sample panel created by applying paint being used to visualize the finished product for comparison and approval

**drier** a paint ingredient that aids the drying or hardening of the film

**dry film thickness (DFT)** the thickness of a coating as measured above the substrate

**dry spray** overspray or bounce-back; sandy or pebbly finish due to spray particle being partially dried before reaching the surface

**efflorescence** a deposit of salts that remains on the surface of masonry, brick or plaster when water has evaporated

**elastomeric** a flexible high-performance coating used to bridge fractures in concrete

**electrostatic spraying** a paint spraying process using electrically charged particles in the paint and a grounded substrate to significantly reduce overspray

**emulsion** preparation where minute particles of one liquid such as oil are suspended in another such as water; used for poly-mix paint in spraying techniques

**enamel** paint that forms an especially smooth, hard film; enamels may be obtained in a full range of glosses and can be either latex, alkyd or oil

**epoxy** product made from synthetic resin derived from petroleum; epoxies, which are generally cured by catalysts, are perhaps the most durable of all coatings

**erosion** the wearing away of paint films to expose the substrate or undercoat

**etching** to wear away or roughen a substrate with an acid or other chemical agent or with a fine abrasive prior to painting to increase adhesion

**explosive limit** a concentration of a gas or vapour in the air which will result in an explosion if an ignition source is present

**feathering** a process used to blend a small area into its surroundings after spot-priming, applying filler or sanding off edges of old paint

**filler** a ready-mixed paste or powder used for repairing small holes and cracks in the surface to be painted

**film thickness** depth or thickness of the dry coating in millimetres

**fire retardant coating** a coating which will reduce flame spread, resist ignition when exposed to high temperature, or insulate the substrate and delay damage to the substrate

**fish eyes** paint film defect caused by contaminants such as oil or water deposits

**flammability** the ability to burn or catch fire

**flashing** a paint film defect caused by inadequate coverage or uneven absorption

**flash point** the lowest temperature at which a given flammable material will flash if a flame or spark is present

**flat paint** paint with no gloss even when the surface is viewed from an angle; flat finish has even less gloss than an eggshell finish; flat paint is less durable than higher gloss paint

**fungicide** mildewcide; toxic chemical to control fungal growth

**galvanic action** corrosion caused by dissimilar metals being in contact with each other

**galvanized steel** zinc-coated steel, usually by dipping in a bath of molten zinc

**gloss** ability of the finished surface to reflect light in a mirror-like manner

**grit** abrasive from slag and other sources used in blast cleaning

**grounding** dissipation of electric charge

**hardener** a catalyst; curing agent

**high build coating** a coating that can be applied

**high volume - low pressure (HVLP)** HVLP guns take up large volumes of air to direct and move the paint but atomize at a low pressure

**hoarding** tall screen or fence used to screen off and contain a construct construction site or work area

holiday pinhole, skip, or other discontinuity in paint film

**holiday tester** specialty tool used to detect pinholes and flaws in coatings on conductive substrates

**honeycomb (bug holes)** concrete that, due to lack of the proper amount of fines or vibration, contains abundant interconnected voids or cavities

**humidity** a measure of moisture content

**hydroblasting** water blasting; cleaning a surface with water at extremely high pressures

**induction time** a time interval that must elapse after mixing the components of a multi-component paint before application can begin; also known as sweat-in time

**impermeable** restricting the passage of moisture, air, or other substance

**intumescent coating** fire retardant coating which, when heated, becomes plastic and produces non-flammable gasses, such as carbon dioxide and ammonia; the gasses are trapped by the film, converting it to an expanding foam; at this stage, the film solidifies, resulting in a thick, highly insulating layer of carbon, which effectively protects the substrate from fire

**ketones** flammable organic solvents such as acetone and methyl ethyl ketones (MEK)

**lacquer** coatings which dry by solvent evaporation

**laitance** white to gray deposit on the surface of new concrete

**latex** natural or synthetic water-based paint product

**lifting** raising and lifting of the surface as a result of the softening and penetration of a previous film by solvents in the paint being applied over it

**masonry** mineral-based building material such as cement, mortar, stone, brick and stucco

**mastic** heavy bodied, high build coating

**metering valve** the valve on the bottom of the abrasive blast machine that controls the flow of abrasive entering the compressed air stream

**mildewcide** chemical agent, often included in exterior paints and caulks, that discourages mildew growth on the paint surface

**mill scale** coating on new steel created by the hot roll process; after weathering, it appears flaky and scaly

**muriatic acid** chemical used to etch and neutralize concrete substrates prior to applying paints and coatings; it is a diluted solution of hydrochloric acid

**oil paint** a paint which is oil-based and can be diluted with solvent; paint that contains drying oil, oil varnish or oil-modified resin as the film-forming ingredient

**opacity** hiding power; ability to obscure an underlying surface

**orange peel** film having the texture of an orange

**overcoat** topcoat

**overspray** dry spray, particularly such paint that failed to hit target

**paint** coatings material used in painting

**peeling** detachment of paint from the surface in ribbons or sheets; like flaking, it is the result of loss of adhesion and film integrity; peeling can be intercoat, or down to the substrate

**pickling** a dipping process of cleaning steel and other metals; the pickling agent is usually an acid

**pigment** a solid, opaque, frequently colored component of paint

**pinholing** a formation of small holes through a coating from improper application

**plural component coating** a coating that is applied using a method that proportions and mixes two or more components of a paint material in the process of delivering them to a spray gun

**pneumatic** operated by compressed air

**polymer** a large molecule formed by the reaction of smaller molecules; used to make synthetic resins

**polyurethane** coatings ranging from hard glossy enamels to soft, flexible coatings; with thorough surface preparation, polyurethanes provide good to very good adhesion, hardness, flexibility and resistance to uv damage

**pot life** period during which a catalyzed paint can be applied after it has been mixed

**primer or prime coat** coating applied to a substrate for the purpose of sealing, adhesion of subsequent coats, and corrosion control

**primer sealer** priming system that minimizes or prevents the penetration of coats into the substrate

**recoat time** minimum and/or maximum period of time between applications of coats of paint

**reinforcing mesh** a mesh used to reinforce surface by being embedded in paint or coatings

**resin** natural or synthetic material that is the main ingredient of paint; it binds the ingredients together and improves the coat's adhesion to the surface

**runs and sags** blemishes on the film caused by excessive flow of the coating, applying too heavy a coat of paint or thinning the paint too much

**rust** corroded iron; red iron oxide deposited on metal

**rust bloom** discoloration indicating the beginning of rusting

**sag** a run in the coating film

**sandblast** a general term used to mean blast cleaning; blast cleaning using an abrasive

**saponification** a type of paint failure caused by the breakdown of the bonds within a paint due to alkaline conditions and moisture resulting in weakness and uncovering of the paint, exposing the underlying material.

**scale** a heavy layer of iron on the surface of steel, could be rust or mill scale

**sealer** coating used to prevent excessive absorption of subsequent coats into a porous surface or to prevent stains from bleeding out of the substrate

**semi-gloss** degree of gloss that is glossier than low lustre but not as glossy as high gloss

**shelf-life** a maximum interval in which a material may be stored and still be in a useable condition

**shot blasting** blast cleaning using steel shot as the abrasive

**silicone resins** a particular group of film formers; used in water-repellant and high temperature paints

**slip psychrometer** device used with standardized tables and charts to measure physical and thermal properties of moist air.

**solvent** any liquid that can dissolve a resin; generally, refers to the liquid portion of paints and coatings that lowers the viscosity of paints and coatings and evaporates as the paint and coating dries

**solvent wash** cleaning the surface to be painted with solvent

**spalling** cracking, breaking or splintering of concrete and masonry surfaces usually due to heat

**specifications** standards applicable to the industrial coatings industry for safety, surface preparation standards, and coatings standards: AMPP, ASTM, ISO, NACE, NFPA, SSPC (see acronyms)

**spot-priming** application of primer to spots that require additional protection or repair

**stripper** chemical compound in gel or liquid form used to remove old or damaged paint

**substrate** surface that is being painted, coated, blasted, etc.

**synthetic brush** paint brush with filaments that are made from a non-absorbent plastic material such as polyester or nylon, rather than animal hair; synthetic brushes are usually used for latex paint

**thinner** liquid used to adjust viscosity or to modify other properties of paint, varnish and lacquer; thinner is used to thin and clean up paint

**topcoat** finish coat

**trisodium phosphate** (TSP) cleaning agent; after the tsp has been dissolved in water, the solution is used in surface preparation; tsp is used to remove gloss, dirt and grease from surfaces

**undercoat** coat of paint applied beneath the topcoat

**urethane** product resulting in a tough, chemical-resistant finish

**vapour degreasing** a cleaning process utilizing a condensing solvent as the cleaning agent, usually in a shop

**venturi nozzle** blast nozzle with a tapered lining for increased blasting speed and a large, more uniform model

**viscosity** degree of resistance to flow of paint, varnish, or other liquids; viscosity is often referred to as consistency; the higher the viscosity, the thicker the fluid; the lower the viscosity, the thinner the fluid

