Painter

Occupational Analysis Report

May 2009

The purpose of this report is to describe as accurately as possible the trade of painter as currently practiced in the Quebec construction industry. The report describes the discussions held by a group of workers who met for the occasion and were referred to the Commission de la construction du Québec (CCQ) by industry partners for their expertise in the trade.

The occupational analysis is a first step in defining the qualifications required of workers in the trade. This report becomes one of the reference and decision-making tools used by the CCQ for teaching and learning purposes.

The Commission de la construction du Québec is not legally responsible for this report. The latter has no legal effect and is intended solely to reflect the discussions held on the date of the analysis workshop.

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The masculine gender is used generically in this document to facilitate reading.

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1. Association paritaire pour la santé et la sécurité du travail du secteur de la construction.

APPROVAL

This occupational analysis of the trade of Painter was read and approved by the following organizations and persons on the dates mentioned below.

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March 24, 2010

TABLE OF CONTENTS

LIST OF TABLES

INTRODUCTION

In early 2009, the Direction de la formation professionnelle of the Commission de la construction du Québec (CCQ) launched a major operation to review the occupational analyses[2] of all construction industry trades[3].

The CCQ undertook this operation for many reasons, notably:

- the project to reform the apprenticeship and workforce management systems in the construction industry, and the eventual design of qualitative learning logs, which require a detailed description of each trade;

- the fact that most construction occupational analyses had been performed between 1987 and 1991 and had not been reviewed since then;

- updates to the question banks of professional qualifying examinations;

- implementation of Chapter 7 of the Agreement on Internal Trade (AIT) and of the France-Québec agreement on the recognition of vocational qualifications.

These factors demonstrate the necessity of performing vocational analyses in order to obtain a current and complete portrait of the various trades practiced in Québec.

The vocational analysis of the painter trade belongs to this context[4]. It aims to describe this trade as it is currently practiced in the construction industry. The present report was written to classify and organize the information gathered during the vocational analysis workshop held in Brossard on March 30 and 31, 2009.

This analysis will draw a portrait of the trade (tasks and operations) and the conditions in which it is practiced, and will identify the skills and behaviours it requires. The report of the vocational analysis workshop faithfully reflects the consensus reached by a group of workers in the trade. Particular efforts were made to include in this report all data collected at the workshop, and to ensure that the data accurately reflect the reality of the trade analysed.

2. When the occupational analyses were being developed, in the eighties and nineties, they were called “analyses of the work situation”.
3. The terms “profession” and “trade” are considered synonymous herein.
4. This vocational analysis was conducted within the framework of the Cadre de référence et instrumentation pour l’analyse d’une profession, produced in 2007 by the ministère de l’Éducation, du Loisir et du Sport (Direction générale de la formation professionnelle et technique) and by the Commission des partenaires du marché du travail, ministère de l’Emploi et de la Solidarité sociale.

1. GENERAL CHARACTERISTICS OF THE TRADE

1.1 DEFINITION OF THE TRADE

According to the Regulation respecting the vocational training of manpower in the construction industry (ann. A, art. 13):

> "Painter" means anyone who:
>
> a) prepares and conditions the inside and outside surfaces of any structure and covers same with one or more coats of film-forming compound for protection and aesthetic purposes.
>
> "Film-forming compound" means any liquid, sticky, natural or synthetic, transparent, semi-transparent, opaque or coloured material that forms a continuous protective film on surfaces;
>
> b) covers wall surfaces with wallpaper or any other similar material that is natural or synthetic, pre-pasted or pasted;
>
> c) performs other work entailing the application of backing, corner beads and accessories, as well as joint-pointing wallboard.
>
> Performance of the work described in the first paragraph includes trade-related handling for the purposes of immediate and permanent installation.

1.2 JOB TITLES

During the workshop, in order to describe the trade, the following job titles were presented to the participants[5]:

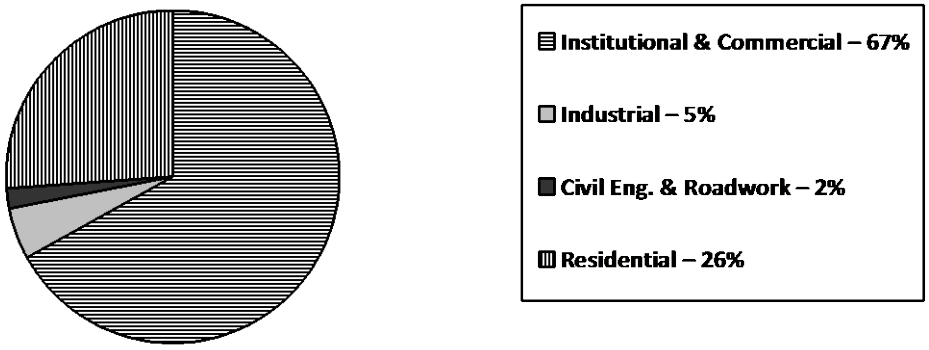
- Painter;
- Building Painter;
- Painter and Decorator;
- Painter-Decorator.

The majority of participants identified with the title of "Building Painter". One of them mentioned that he considers himself a painter specializing in faux finishes. However, in the present report, the title retained is that of "Painter", because it is used in the Regulation respecting the vocational training of workforce in the construction industry.

5. The job title of "Painter and Decorator" is taken from the following document, produced in 2007 by Human Resources and Skills Development Canada (Red Seal): *Occupational Analyses Series: Painter and Decorator*.

1.3 SECTORS OF ACTIVITY

Painters are active in the four sectors of the construction industry, but to different degrees. The diagram below illustrates the work time allocation of all Québec painters in the four sectors for the year 2008[6].



Some of the participants in the workshop work in the four sectors of the industry. Others work in only two or three sectors, while others, less numerous, specialize in one sector only.

We asked them to estimate the proportion of their work time allocated to each industry sector. The results are presented in the table below, in the form of averages for all the participants.

Table 1.1 Consulted Participants' Work Time per Sector

SECTOR	% OF WORK TIME
Institutional and commercial	50%
Industrial	10%
Civil engineering and roadwork	10%
Residential	30%

The proportion of work time allocated by the participants to the institutional and commercial sector is 17% less than to Québec painters as a whole. According to the participants, this difference is distributed more or less equally between the three other sectors of the industry.

6. Commission de la construction du Québec, *Carrières construction*, Québec, 2008-2009 edition, p. 58.

1.4 FIELD OF PRACTICE

The trade's field of practice is the construction industry. The Act respecting labour relations, vocational training, and manpower management in the construction industry (R.S.Q., c. R-20) defines construction as follows:

> […] the foundation, erection, maintenance, renewal, repair, alteration and demolition work on buildings and civil engineering works carried out on the job site itself and vicinity including the previous preparatory work on the ground;
>
> In addition, the word "construction" includes the installation, repair and maintenance of machinery and equipment, work carried out in part on the job site itself and in part in the shop, moving of buildings, transportation of employees, dredging, turfing, cutting and pruning of trees and shrubs and laying out of golf courses, but solely in the cases determined by regulation.

The construction industry experiences peak periods and slower ones, depending somewhat on the trades. According to the participants, the demand for painters is strongest from May to September; in recent years, there has even been a shortage of painters during this period. Moreover, demand is weakest from January to March. The participants mention that during this slower period, it happens that contractors lose qualified and well-appreciated employees for lack of work to give them. Those employees then look for work among contractors who have been granted more contracts.

Generally, the painter works for a construction contractor specializing in painting or for a general contractor; he is hired as a salaried employee. It is not unusual for him to work for more than one contractor during the same year, particularly to find full-time work.

1.5 LEGISLATION AND REGULATIONS

Construction industry painters are subject to:

- the Act respecting Labour relations, vocational training and workforce management in the construction industry (R.S.Q., c. R-20);
- The Regulation respecting the vocational training of workforce in the construction industry (R-20, r.6.2)

- the four sector-based collective agreements for the construction industry;
- the National Building Code – Canada 2005 (NBC);
- the Quebec Building Code, Chapter I, “Building”;
- the Act respecting occupational health and safety (R.S.Q., c. S-2.1);
- the Safety Code for the construction industry (R.Q. c. S-2.1, r.6).

1.6 WORKING CONDITIONS

The following information provides an overview of the conditions and context of the work of painters, as commented by participants in the occupational analysis workshop. To obtain up-to-date and complete information that has legal effect, it is necessary to refer to the four collective agreements for the construction industry sectors.

Salary[7]

The hourly wage of a journeyman painter varies according to the sector of activity and the applicable wage schedule. As a general rule, for the day schedule, as of April 27, 2008:

- Civil engineering (Annex D): $29.92
- Industrial (Annex B), institutional and commercial (Annex C): $29.47
- Heavy residential (Annex R1): $29.58
- Light residential (Annex R): $26.02

Vacations and time off[8]

Mandatory annual holidays of four weeks – two weeks in summer and two in winter at periods predetermined in collective agreements – are the general rule in the construction industry. To avoid penalizing employers and employees experiencing special constraints, the industry’s four collective agreements allow certain possibilities for changing the vacation periods prescribed by the general rule.

To these vacation periods are added eight not paid statutory holidays, as well as a lump sum for sick leaves not otherwise paid.

7. Salary data are taken from the following document, published by the Commission de la construction du Québec: *Faits saillants des conventions collectives sectorielles de l'industrie de la construction 2007-2010*.
8. Data on vacations and time off, the pension plan and insurance are taken from the following document, published in 2009 by the Commission de la construction du Québec: *La construction au Québec: c’est bien plus payant!*

Pension plan

Construction industry workers participate in a pension plan. They retain their eligibility for this pension plan throughout their career in construction, even if they change employer, trade or sector.

Insurance

The group insurance plan (medications, illness, disability, death) is fully paid by employers. Workers (and their families, as the case may be) are eligible to it so long as they remain active in the construction industry and work the required number of hours, whether or not they change employer.

Physical requirements

The work requires:

- a good physical condition;
- a certain physical strength, to lift and move loads, such as paint containers;
- endurance, to sustain continuous physical work for several hours;
- resistance to sometimes difficult ambient conditions (heat, cold, strong odours, etc.).

Stress factors

Painters have to deal with productivity requirements, which often oblige them to work quickly within a tight deadline. Most of the time, they have to maintain a very constant pace of work to meet those deadlines, which is a significant stress factor.

Another stress factor is that painters have to coordinate their work with that of other trades on a construction site. So based on the progress of work and their communication with other workers, they have to evaluate at what moment they can begin their work; this is often difficult, given the number of trades involved and the possible delays each team can experience. Indeed, the participants in the workshop add that being the last ones to work on a construction site, painters often have to compensate for delays accumulated over the previous stages of a project; this increases the necessity of working quickly and creates additional stress.

Autonomy

The painter works with or without supervision, depending on the scale of the work. Supervision is done in a timely manner since the person in charge is not constantly near the painter. Generally, on the smallest construction sites, the painter works alone, whereas on larger sites he tends to work within a team. Moreover, irrespective of the size of the site, some tasks are performed individually, for example when using paint spray guns or sanding large surfaces.
However, the participants mention that a construction worker should never be alone on a construction site, for safety reasons. In fact, collective agreements contain provisions regarding circumstances under which a salaried worker cannot work alone.

Versatility

A painter's versatility and readiness to perform all the tasks related to his trade assure him of a more permanent position with his employer. A painter who masters the skills to perform all the tasks of a project increases his chances of working year-long for the same employer.

Those tasks may slightly exceed painting activities, so long as they do not infringe on the trade jurisdictions provided for in the regulations. Versatility is thus very much appreciated by employers; like the painter's attitude and performance, it is a determining factor of quality work within deadlines.

Work schedules

Collective agreements determine work schedules effective in all sectors of the construction industry.

The daily limit is 8 hours per day, except in light residential construction, where it can reach a maximum of 10 hours within a 40-hour work week.

So as not to penalize employers and employees experiencing specific constraints, the same collective agreements provide for many possibilities for changing the schedule: compressed schedule, schedule shift, make-up time in light residential construction, etc. These specifics confer substantial flexibility to schedules in effect in the construction industry.

1.7 WORK ORGANIZATION

In the companies represented by the participants, painters may be supervised by a foreman. In addition, in some cases, particularly in industrial, civil engineering and roadwork companies (e.g.: aluminium smelters, Hydro-Québec), the client requires that one of his quality control employees supervise the work of painters. This person ensures compliance with the client's standards, which are generally higher than those usually in effect.

Moreover, at the employer's request, a team leader may be named to carry out, in addition to his painter's tasks, those of supervision or coordination (of at least four workers).

1.8 JOB MARKET ENTRY CONDITIONS

To obtain a competency certificate-apprentice in the trade, candidates must present to the CCQ the original version of an academic transcript or apprenticeship transcript attesting that they have graduated with a DEP in building painting[9], as well as a guarantee of employment from an employer registered with the CCQ, for at least 150 hours over a period of at most three consecutive months[10].

Although the construction industry favours graduates for access to the trade, labour shortages may at times make it necessary to give candidates without a diploma access to the painter trade. Accordingly, candidates without a diploma[11] are eligible for a competency certificate-apprentice only during a labour shortage and must[12]:

- Supply proof that they have the academic prerequisites for the program leading to a vocational studies diploma (DEP) in the trade referred to in the application or pledge, by signing a consent letter, to take the necessary training to obtain those academic prerequisites;

9. To apply, candidates must also: provide proof that they are at least 16 years old, their social insurance number and their home address; present their certificate for having passed the course Santé et sécurité sur les chantiers de construction; pay the required fee; and designate the union association that they wish to join. Source: http://www.ccq.org/E_CertificatsCompetence/E02_Apprenti.aspx?sc_lang=en&profil=GrandPublic
10. Source: http://www.ccq.org/E_CertificatsCompetence/E02_Apprenti/E02_3_CandidatDiplome.aspx?sc_lang=en&profil=GrandPublic
11. Of the 11 participants in the workshop, 6 began practicing the trade without training.
12. Source: http://www.ccq.org/E_CertificatsCompetence/E02_Apprenti/E02_6_CandidatNonDiplome.aspx?sc_lang=en&profil=GrandPublic

- present a guarantee of employment during a labour-pool opening by an employer registered with the Commission de la construction du Québec (CCQ), for at least 150 hours over a period of at most three consecutive months.

The apprentice painter must complete the three apprenticeship periods of 2,000 hours each (6,000 hours total) in order to be eligible for the provincial qualification examination that leads to obtaining the journeyman competency certificate for the trade. 900 hour credits are paid into the apprenticeship record book of an apprentice painter who has obtained his DEP[13].

In addition, certain qualities are sought by employers hiring new painters. The following list presents the main qualities, in the order in which they were mentioned and not in order of importance:

- love of the trade;
- resourcefulness;
- availability;
- versatility;
- workmanship (method, manner of applying paint with a roller or spray gun, of cutting, etc.);
- logical skills;
- organizational skills;
- teamwork ability;
- be able to work at heights (not afraid of heights);
- an artistic sense for certain sites (luxury houses, faux finishes, etc.);
- fortitude;
- mastery of basic techniques (masking, puttying, sanding, etc.);
- basic knowledge of the theory of colours;
- having “a good eye” for evaluating the condition of surfaces, the quality of work, etc.

13. http://www.ccq.org/F_Formation/F03_MesuresIncitatives/F03_2_CreditsHeures.aspx?sc_lang=en&profil=Syndicales

1.9 PLACE OF WOMEN IN THE TRADE

Section 126.0.1 of the Act respecting labour relations, vocational training, and manpower management in the construction industry pertains to women's access to the construction industry: "The Commission, after consultation with the Commission des droits de la personne et des droits de la jeunesse, shall develop measures to favour the access of women to and their maintenance and greater representation on the labour market in the construction industry."

According to the CCQ[14], the proportion of women active in the trade of painter is 7% (367 women out of 5,316 painters in 2007) and is the highest of any trade in the construction industry.

The participants who hire personnel reveal that women who have been hired demonstrated a great willingness to learn, great attention to detail, and determination to broaden their skills. These findings have thus created, in the eyes of these participants and others, a favourable attitude to integrating women to a work team.

The participants in the workshop mentioned that the workplace has evolved over the years and that most contractors are willing to hire women. Nevertheless, they add that exceptions remain – some painters refuse to see women join their trade, let alone to work with them. It was mentioned that others have reservations about the integration of women to the trade; without being so extreme, such attitudes are detrimental to harmony between members of a work team. Those reservations are reportedly related mainly to task-sharing within teams, particularly for moving heavy loads. Given the necessity of having a certain physical strength, contractors most often assign this type of work to men, which may make some employees feel unfairly treated. However, some of the participants point out that in any case, even men should not have to lift excessive loads, according to health and safety standards. Other participants answer that this would be the case in an ideal world, but that meanwhile they must meet the demands of the contractor who hires them.

14. Commission de la construction du Québec, *Carrières construction*, Québec, 2008-2009 edition.

1.10 CAREER PROSPECTS

With experience and depending on their fields of interest, painters are eligible for the positions of foreman, project manager, supervisor, estimator, trainer, expert and consultant for organizations related to their trade. If they wish, they can also become contractors.

1.11 DEVELOPMENT OF THE TRADE

The participants pointed out some changes that have occurred in their trade in recent years. In particular, they mention that since August 2006, a painter can no longer spray paint, on concrete slab ceilings, a limestone and clay texture called “sheetrock texture finish”[15]. They add that it is more and more difficult to find versatile painters, capable of performing all the tasks of the trade.

The participants observe a trend that has appeared in recent years and that should continue in coming years: a diversification of the types of products they have to use. Particularly in the residential sector, products are changing more rapidly, and often require changes in application techniques, drying times, surface preparation, etc. For example, the new washable paints with a matte finish are more difficult to apply than similar former products.

The use of products with multiple constituents (epoxy paints, for example) has greatly proliferated in recent years, in every sector; the participants estimate that this trend will continue. They also forecast that within five years, paints will generally be significantly more durable. This improved durability of coverings should lessen the need to repaint surfaces.

Design and interior decoration trends also influence the work of painters, particularly in the institutional and commercial sector, as well as the residential sector. For example, the participants have noticed in recent years an increased demand for the application of wallpaper.

15. Commissaire de l'industrie de la construction, CC-500-002964 of August 31, 2006.

1.12 IMPACT OF ENVIRONMENTAL STANDARDS ON THE PRACTICE OF THE TRADE

The application of various environmental standards has had some effects on the work of painters. These changes mainly pertain to products that painters use; the latter must get rid of those products once their work is completed. For instance, in the past, solvents were poured into the environment once painters had finished cleaning their tools and equipment. Nowadays, solvents used are recovered and remitted to the contractor, who is responsible for disposing of them[16].

The products used have also changed. Indeed, environmental standards have led manufacturers to market a variety of ecological paints, which are used more and more frequently. Some participants even forecast that, for ecological reasons, alkyd-based paints are destined to disappear. Thus, certain products are already not being used anymore, and others are less and less. These changes have an impact on the work of painters, since the new products, more environmentally friendly, involve differences notably in the method of application, the tools used, and surface preparation. Painters therefore have to adapt to these new practices.

16. Solvents, thinners, unused paint, varnishes, etc., may be collected as hazardous products by municipalities. The *Association des maîtres peintres du Québec* also offers its members such collection services. In addition, some companies specialize in paint recovery and provide disposal sites at various locations in Quebec.

2. WORK DESCRIPTION

2.1 TASKS AND OPERATIONS

List of tasks

The following list presents the main tasks performed by painters. It should be noted that the order in which the tasks are presented does not necessarily reflect their importance in the trade.

Task 1	Prepare wood surfaces
Task 2	Prepare limestone surfaces
Task 3	Prepare metal surfaces
Task 4	Prepare synthetic surfaces
Task 5	Prepare wallboard surfaces
Task 6	Apply paints
Task 7	Apply multiple-constituent film-forming products
Task 8	Apply gritty film-forming products
Task 9	Apply varnishes and stains
Task 10	Apply coatings
Task 11	Reproduce letters, numbers and forms
Task 12	Apply gold and silver leaves
Task 13	Apply faux finishes
Task 14	Erect scaffolding

Table of tasks and operations

The table of tasks and operations taken from the painters' work situation analysis conducted in 1987[17] was first presented to the participants. Changes have been made to that table in order to produce the new table presented in the following pages. Generally, the painter's tasks and operations have not changed much over the years – the main changes have been related to the products and equipment used. So on the workshop's second day, a new task was added, with the agreement of all the participants, to take into account the growing use of a category of products. This is task 7, which consists of applying multiple-constituent products. The other changes made to the initial table of tasks are minor and concern the formulation of certain operations.

17. Ministère de l'Éducation, *Peintre en bâtiment: rapport d'analyse de la situation de travail*, Québec, 1987.

Table 2.1 Tasks and Operations

TASKS	OPERATIONS					
1. Prepare wood surfaces	1.1. Examine the work to be done	1.2 Prepare the equipment	1.3 Protect the other surfaces	1.4 Clean the surfaces	1.5 Remove old materials, if applicable	1.6 Prepare products
	1.7 Repair surfaces, if applicable	1.8 Sand, if applicable	1.9 Apply the primer, if applicable	1.10 Clean tools and equipment		
2. Prepare limestone surfaces	2.1 Examine the work to be done	2.2 Prepare the equipment	2.3 Protect the other surfaces	2.4 Repair surfaces, if applicable	2.5 Sand, if applicable	2.6 Clean the surfaces
	2.7 Prepare products	2.8 Apply the primer	2.9 Clean tools and equipment			
3. Prepare metal surfaces	3.1 Examine the work to be done	3.2 Prepare the equipment	3.3 Protect the other surfaces	3.4 Repair surfaces, if applicable	3.5 Sand, if applicable	3.6 Clean the surfaces
	3.7 Prepare products	3.8 Apply the primer, if applicable	3.9 Clean tools and equipment			
4. Prepare synthetic surfaces	4.1 Examine the work to be done	4.2 Prepare the equipment	4.3 Protect the other surfaces	4.4 Repair surfaces, if applicable	4.5 Scrape or sand the surfaces	4.6 Clean the surfaces
	4.7 Prepare products	4.8 Apply the primer	4.9 Clean tools and equipment			
5. Prepare wallboard surfaces	5.1 Examine the work to be done	5.2 Prepare the equipment	5.3 Protect the other surfaces	5.4 Install metal corners	5.5 Apply joint tape	5.6 Apply the sealant
	5.7 Smooth the surface	5.8 Apply the 2nd and 3rd layers of sealant	5.9 Sand between layers of sealant and at the end	5.10 Apply the primer	5.11 Clean tools and equipment	

TASKS	OPERATIONS					
6. **Apply paints**	6.1 Check the condition of surfaces	6.2 Apply the necessary finishing coat(s)	6.3 Sand between coats, if applicable	6.4 Check tools and equipment	6.5 Store the equipment and clean the premises	
7. **Apply multiple component film-forming agents**	7.1 Check the condition of surfaces	7.2 Prepare products	7.3 Apply the necessary finishing coat(s)	7.4 Sand between coats, if applicable	7.5 Clean tools and equipment	7.6 Store the equipment and clean the premises
8. **Apply gritty film-forming constituents**	8.1 Mask, if necessary	8.2 Prepare the compound (stain, if necessary)	8.3 Apply the compound	8.4 Apply the 2nd coat, if applicable	8.5 Remove masking tape	8.6 Paint, if applicable
	8.7 Clean tools and equipment	8.8 Store the equipment and clean the premises				
9. **Apply varnishes and stains**	9.1 Discolour surfaces, if necessary	9.2 Repair defects	9.3 Apply fillers and stains	9.4 Apply varnishes	9.5 Polish surfaces	9.6 Clean tools and equipment
	9.7 Store the equipment and clean the premises					
10. **Apply coatings**	10.1 Read the instructions	10.2 Take measurements and plan for seams	10.3 Check and prepare the equipment	10.4 Prepare the paste for the primer paper, if applicable	10.5 Apply primer paper, if applicable	10.6 Prepare the paste, if applicable
	10.7 Paste or soak the sheets	10.8 Apply the sheets	10.9 Cut excess material	10.10 Roll the joints	10.11 Remove excess paste	10.12 Clean surface protection
	10.13 Check tools and equipment	10.14 Store the equipment and clean the premises				

TASKS	OPERATIONS					
11. **Reproduce letters, numbers and shapes**	11.1 Trace, measure, draw	11.2 Prepare paints	11.3 Mask, if desired	11.4 Apply the master colour, if applicable	11.5 Apply the following colours	11.6 Sand, if applicable, and clean
	11.7 Apply the protective coat, if applicable	11.8 Clean tools and equipment	11.9 Store the equipment and clean the premises			
12. **Apply gold and silver leaves**	12.1 Prepare and stain the mordant	12.2 Apply the mordant	12.3 Let it set	12.4 Apply the gold or silver leaf	12.5 Work on the leaf and cut, if applicable	12.6 Apply a layer of gum lac, if applicable
	12.7 Polish	12.8 Clean tools and store the equipment				
13. **Apply faux finishes**	13.1 Prepare the surface	13.2 Prepare paints or glazes	13.3 Apply base paints according to the work to be done	13.4 Trace lines and perimeters	13.5 Apply glazes, colours and varnishes	13.6 Polish surfaces
	13.7 Check tools and equipment	13.8 Store the equipment and clean the premises				
14. **Erect scaffolding**	14.1 Analyse the work to be done and the location	14.2 Check the equipment	14.3 Prepare the ground	14.4 Install the bases	14.5 Assemble the elements according to standards	14.6 Dismantle scaffoldings
	14.7 Store the equipment					

2.2 OPERATIONS AND SPECIFICS

The following text groups complementary information corresponding to most of the tasks and a few of the operations[18] presented in Table 2.1 above.

Table 2.2 Operation Specifics

TASK 1 PREPARE WOOD SURFACES	
Operations	**Specifics**
1.2 Prepare the equipment	This is equipment such as trays, brushes, rollers, gummed tape, drop cloth, etc., and necessary tools for preparing the wood surface.
1.3 Protect the other surfaces	Surfaces not to be painted, stained or varnished (counters, floors, etc.) must be protected.
1.4 Clean the surfaces	This is to remove dust and fatty substances. It can be repeated several times during the task.
1.5 Remove old materials, if applicable	This is to remove from the surface old materials such as paint, varnish, etc. To do so, the painter may, among other things, scrape, sand, strip, clean at high pressure and use chemical agents.
1.6 Prepare products	This operation may include, for example, mixing, reduction, dilution or filtering of products to be applied. In some cases, the ambient temperature, if it is too cold or hot, may adversely affect the quality of the work. It may make products more difficult to apply and reduce their durability. However, most products can be applied when the temperature ranges between 10 and 30°C[19].
1.7 Repair surfaces, if applicable	The painter repairs holes and cracks with mastic, wood pulp or other appropriate plasters.
1.9 Apply the primer, if applicable	The primer must be applied in equal and sufficient quantity to the entire surface. The primer coat may be stained, which will limit the number of finishing coats.

18. It should emphasized that not all operations appear in this table, but only those about which the participants provided specifics.
19. There are exceptions: Some products can even be applied at temperatures lower than 0°C.

TASK 2 PREPARE LIMESTONE SURFACES	
Limestone surfaces are, among others, concrete, plaster, stone, brick and stucco.	
OPERATIONS	**Specifics**
2.4 Repair surfaces, if applicable	Depending on the surface and the type of repair, the painter may use polymers, resins, grout, etc.
2.5 Sand, if applicable	It is also possible to sandblast, grind or shot blast[20] sufficiently resistant surfaces.
2.6 Clean the surfaces	Cleaning may be done with water, dry or with chemical agents, as the case may be.
TASK 3 PREPARE METAL SURFACES	
Operations	**Specifics**
3.7 Prepare products.	This operation includes, among other things, mixing the products to be applied.
TASK 4 PREPARE SYNTHETIC SURFACES	
Synthetic surfaces are, among others, fibreglass, plastic, vinyl and melamine.	
Operations	**Specifics**
4.5 Scrape or sand the surfaces	This work is delicate; care must be taken not to damage the synthetic surface, which is fragile in many cases.
4.6 Clean the surfaces	Cleaning is intended to make the surface clean and free of all residues of dirt, grease, etc. The methods used may vary according to the manufacturer of the products to be applied.
TASK 5 PREPARE WALLBOARD SURFACES	
This task requires work slightly different from those of other surface preparation tasks (Tasks 1, 2, 3 and 4). It is not limited to repairing surface defects, sanding surfaces and applying a primer. It also includes operations to fill and sand the joints between wallboards; this work is shared between painters and plasterers. However, this task also includes operations for the painter, such as applying the primer.	

20. Shot blasting a surface consists of projecting shots (metal reduced to small grains) at very high speed, in order to remove eventual residues from it or create bonding.

TASK 6 APPLY PAINTS	
The painter must refer to the specifications or the table of finishes[21] to know precisely which surfaces must be painted or not. He must also consult paint manufacturer data sheets to know what area can be covered by each gallon (square feet/gallon).	
6.2 Apply the necessary finishing coat(s)	The application may be done using various techniques and types of equipment. The choice of equipment is determined by the surfaces to be painted, the products to be applied, the desired finishes and the colours. The airless paint gun is mainly used in the commercial, civil engineering, road and residential sectors, often to apply the primer or paint large metal surfaces, for example shopping centre ceilings. However, in some cases, the specifications require that the last coat be completed with a roller, to obtain the desired finish. Other than the airless gun, there are other types of paint guns, such as traditional, electrostatic and HVLP (high volume low pressure) guns, which are used for doing specific work, obtaining particular finishes, etc. The participants estimate that they use a paint gun about 15% of their work time. However, on certain construction sites, they use a gun almost exclusively. Finally, whatever the equipment used, the finish coat application must result in a uniform and opaque finish[22].
TASK 7 APPLY MULTIPLE-CONSTITUENT FILM-FORMING PRODUCTS	
Multiple-constituent products (generally constituted by 2 or 3 components) mainly contain epoxy and urethane. In the case of epoxy-based products, the various components have to be mixed shortly before application.	
TASK 8 APPLY GRITTY FILM-FORMING COMPOUNDS	
These are compounds to which are added grains of sand, propylene or polymer beads, etc. These compounds' method of application (gun, roller, trowel, etc.) may vary according to their consistency.	
TASK 9 APPLY VARNISHES AND STAINS	
This task is essentially carried out on wood surfaces.	

21. The table of finishes is a plan showing all surfaces to be treated, as well as the colours and finishes to be applied.
22. This information is relevant to all tasks requiring painters to apply finish coats.

TASK 10 APPLY COATINGS

The painter applies wallpaper (in vinyl or others), bonded fabric, rolled semi-rigid natural materials (e.g., cork, wood), etc.

It should be noted that the participants consulted do not apply wall coatings made of fabrics that have to be sewed and, most often, stretched and then fastened to walls with wood strips.

Operations	Specifics
10.1 Read the instructions	These are application instructions, related, for example, to the type of paste to be used, the direction of sheets (reversed or not), etc.
10.7 Paste or soak the sheets	This operation may vary depending on whether a pre-pasted coat is used or not.

TASK 11 REPRODUCE LETTERS, NUMBERS AND SHAPES

Numbers, letters or shapes (drawings, logos, symbols, etc.) are reproduced to identify or decorate surfaces. Identification is made using numbers, letters or symbols that are reproduced on various surfaces, for example asphalt, to identify parking spaces.

Decoration consists of reproducing shapes or drawings on various surfaces for aesthetic purposes, to embellish them, attract attention, etc. The painter decorates according to a model on paper, which at times he must enlarge to scale. The model is first reproduced on the surface by tracing, and the colours are then applied.

This task may require the use of a template.

Operation	Specifics
11.7 Apply the protective layer, if applicable	Some surfaces must be protected to improve their resistance. This is the case for lines delimiting parking spaces.

TASK 12 APPLY GOLD AND SILVER LEAVES

According to the participants, there is very little demand for this type of work; this task is less and less frequent and is performed by a small number of painters. In fact, only a few of the participants in the workshop knew the task, and only one performed it regularly in his work and could describe it in detail.

The task is performed by specialized painters who work for contractors specializing in repairs to historic buildings (notably churches) or doing particular finishes in prestigious residences. It is not part of the usual tasks of the majority of painters.

Moreover, it is mentioned that due to the high cost of gold and silver leaves, reproductions are sometimes used. But the procedure is the same.

TASK 13 APPLY FAUX FINISHES	
The faux finish technique has become more popular among consumers in recent years. Originally, the main purpose of faux finishes was to imitate natural materials such as stone or marble. They provide the appearance of such materials without requiring a particular structure to support their weight. Their use has spread to the reproduction of other materials such as bricks, to the representation of landscapes, and to the production of special effects. However, this task is performed by a small number of painters and is considered by the participants as a trade specialty.	
Operation	**Specifics**
13.1 Prepare the surface	The painter ensures that the surface is free from cracks and defects; if applicable, he repairs and then cleans the surface.
13.3 Apply base paints according to the work to be done	This operation corresponds to the application of the main coat.
TASK 14 SCAFFOLDING	
As a general rule, the painter does the scaffolding work regarding his trade. When scaffolding is used for several trades, contractors are more and more often calling on companies specializing in the field.	
Operation	**Specifics**
14.2 Check the equipment	The operation applies to any type of scaffolding. The painter checks scaffolding safety. This verification should be done at least once a day, since even scaffolding that was well erected at the start of work may become less safe with use.

2.3 ACHIEVEMENT CONDITIONS AND PERFORMANCE CRITERIA

2.3.1 ACHIEVEMENT CONDITIONS

Achievement condition data were collected for the entire trade of painter. They pertain to aspects such as workplaces, health and safety hazards, reference work and material resources used.

Table 2.3 Achievement Conditions

Workplaces[23] The painter may work in various locations, such as single-family houses, apartment buildings, shopping centres, hospitals, schools, retirement homes, hotels, restaurants, office buildings, stores, bridges, viaducts, dams, etc. Moreover, the painter has to work indoors and outdoors, in all seasons, even in very hot or cold weather.
Instructions Verbal instructions are given to the painter by the contractor or the foreman. Written instructions are mainly excerpts from the specifications and tables of finishes that describe the work to be done by the painter.
References Manufacturer instructions, product data sheets, manufacturer instructions regarding products to be applied, safety manuals, safety sheets of the Workplace Hazardous Materials Information System (WHMIS).
Raw materials, tools and equipment In Annex 1 of the present report is a list of material resources for the work of painters.
Health and safety hazards In Annex 2 of the present report is a list of the main hazards involved in painter tasks and operations, as well as applicable preventive measures.

23. Non-exhaustive list.

2.3.2 PERFORMANCE CRITERIA

Performance criteria were collected for each task. They are used for evaluating whether tasks have been performed satisfactorily. The criteria apply to aspects such as the quantity and quality of the work done, observance of a work procedure, the attitudes adopted, etc.

To draw a list of the criteria related to each task, the participants worked in teams of two or three. Their results were then collected and presented in full session. So some criteria may apply to other tasks as well as to those for which they were selected: for example, the demonstration of autonomy, important for tasks 2, 3, 12 and 13, could be just as useful in performing other tasks. The latter were discussed by different participants, who preferred to emphasize other criteria, which does not exclude that autonomy may be necessary for performing task 1 and tasks 4 to 11.

Table 2.4 Performance Criteria

TASK 1 PREPARE WOOD SURFACES	
Performance Criteria	
- Correct interpretation of guidelines or instructions. - Appropriate choice of tools, products and quantities depending on the surfaces. - Absence of dust. - Correct repairs. - Appropriate sanding. - Careful verification of the condition of surfaces. - Observing the required period between treatments. - Correct assessment of his limits regarding the intervention. - Appropriate masking and protection of adjacent surfaces.	- Appropriate use of products. - Realistic assessment of the time required for the work to be done. - Efficient coordination between construction trades. - Putting up appropriate Signage (fresh paint and safety). - Careful visual inspection of the work done. - Adequate application of the product on the surface. - Meeting deadlines. - Correct assessment of the work's feasibility.
TASK 2 PREPARE LIMESTONE SURFACES	
Performance Criteria	
- Correct interpretation of guidelines or instructions. - Appropriate choice of tools, products and quantities depending on the surfaces. - Appropriate verification and repair of surfaces. - Absence of dust.	- Effective protection of adjacent surfaces. - Careful comparison of the sample with the result obtained. - Meeting safety standards. - Meeting environmental standards. - Meeting deadlines. - Demonstration of autonomy.

Task 3 Prepare Metal Surfaces

Performance Criteria

- Correct interpretation of technical data.
- Appropriate choice and use of tools.
- Equipment cleanliness.
- Cleanliness of surfaces and work area.
- Meeting safety standards.
- Wearing a mask when sanding.
- Meeting environmental standards.
- Following all surface preparation steps.
- Effective prevention of work hazards.
- Careful verification of the condition of surfaces.
- Good judgement.
- Demonstrating a meticulous and conscientious attitude.
- Demonstration of autonomy.
- Absence of defects visible from 5 feet (in front).
- Meeting specifications.
- Following instructions.
- Meeting deadlines.

Task 4 Prepare Synthetic Surfaces

Performance Criteria

- Appropriate cleaning of surfaces.
- Appropriate verification and repair of surfaces.
- Correct assessment of the work procedure to follow.
- Appropriate sanding, if applicable.
- Appropriate choice and use of tools.
- Correct recognition of chemical agents used.
- Following manufacturer instructions.
- Meeting deadlines.
- Maintaining workplace safety.

Task 5 Prepare Wallboard Surfaces

Performance Criteria

- Appropriate use of tools.
- Cleanliness of surfaces.
- Appropriate cleaning of the work area.
- Meeting environmental standards.
- Meeting safety standards.
- Wearing a mask when sanding.
- Following all surface preparation steps.
- Effective prevention of work hazards.
- Careful verification of the condition of surfaces.
- Ability to work with quick-setting products.
- Good judgement.
- Correct assessment of setting time.
- Great attention to detail.
- Conscientious attitude.
- Correct application of specific techniques.
- Absence of defects visible from 5 feet (in front).
- Meeting deadlines.

TASK 6 APPLY PAINTS

Performance Criteria

- Meeting specifications.
- Correct interpretation of guidelines and instructions.
- Appropriate verification of the surface.
- Appropriate verification of the paints (finish, colour, quantity).
- Appropriate choice of tools to do the work.
- Putting up appropriate Signage (safety and fresh paint).
- Colour corresponding to specifications.
- Appropriately performing compatibility tests.
- Well-cleaned equipment.
- Adequate use of products according to WHMIS.

TASK 6 APPLY PAINTS (CONT'D)

Performance Criteria

- Meeting deadlines according to the mixes.
- Effective protection of adjacent surfaces.
- Good work coordination.
- Good judgement.
- Meeting deadlines.
- Workplace cleanliness following paint application.

TASK 7 APPLY MULTIPLE-CONSTITUENT FILM-FORMING PRODUCTS

Performance Criteria

- Meeting specifications.
- Correct interpretation of instructions and guidelines.
- Appropriate verification of the surface.
- Appropriate verification of the paints (finish, colour, quantity).
- Appropriate choice of tools to do the work.
- Meeting deadlines according to the mixes.
- Effective protection of adjacent surfaces.
- Good work coordination.
- Good judgement.
- Putting up appropriate Signage (safety and fresh paint).
- Colour according to specifications.
- Performing compatibility tests appropriately.
- Well-cleaned equipment.
- Adequate use of products according to WHMIS.
- Meeting deadlines.
- Workplace cleanliness following paint application.

TASK 8 APPLY GRITTY FILM-FORMING COMPOUNDS

Performance Criteria

- Meeting specifications.
- Checking that the surface is appropriate for receiving the gritty compound.
- Clean surface and as straight as possible.
- Precise masking of adjacent surfaces to protect them.
- Correct interpretation of product instructions.
- Performing compatibility tests appropriately.
- Correct product application.
- Choosing appropriate tools.
- Meeting deadlines.
- Well-cleaned equipment.
- Cleanliness of the area following the work.
- Respect for the client.

TASK 9 APPLY VARNISHES AND STAINS

Performance Criteria

- Appropriate lighting.
- Checking and repairing surfaces appropriately.
- Adequate sanding.
- Surface cleanliness and absence of dust.
- Performing compatibility tests appropriately.
- Taking care to compare with the sample.
- Choosing appropriate tools and equipment according to the desired finish.
- Checking safety equipment (goggles, mask, etc.).
- Appropriate ventilation (drying and safety).
- Meeting deadlines.

TASK 10 APPLY COATINGS

Performance Criteria

- Meeting specifications.
- Appropriate verification and repair of the surface.
- Appropriate sanding of the surface.
- Clean and smooth surface.
- Appropriate verification of equipment condition.
- Verification and appropriate use of tools.
- Correct interpretation of application instructions.
- Meeting deadlines.
- Respect for the client.
- Careful inspection of results.
- Absence of bubbles.
- Correct connection of patterns.
- Aesthetic joints.
- Well-cleaned equipment and clean workplace.

TASK 11 REPRODUCE LETTERS, NUMBERS AND SHAPES

Performance Criteria

- Correct interpretation of instructions.
- Complete protection of adjacent surfaces.
- Appropriate choice of tools, products and quantities according to surfaces.
- Checking and repairing surfaces appropriately.
- Securing the location appropriately.
- Absence of dust.
- Smooth surface after sanding.
- Meeting safety standards.
- Meeting environmental standards.
- Meeting deadlines.
- Putting up Signage adequately.
- Working in coordination with other construction trades (traffic).
- Demonstrating great attention to detail.

TASK 12 APPLY GOLD AND SILVER LEAVES

Performance Criteria

- Correct feasibility assessment (ambient temperature).
- Taking all specifications into account.
- Preparing the workplace appropriately.
- Workplace cleanliness.
- Performing reaction tests correctly.
- Appropriate use of tools and equipment.
- Colour corresponding to specifications.
- Correct surface preparation.
- Appropriate repairs, if applicable.
- Forecasting the necessary time.
- Meeting safety standards.
- Adequate handling of materials.
- Demonstrating autonomy.
- Ability to work in a team or individually.

TASK 13 APPLY FAUX FINISHES

Performance Criteria

- Correct feasibility assessment (ambient temperature).
- Taking all specifications into account.
- Preparing the workplace appropriately.
- Workplace cleanliness.
- Performing reaction tests correctly.
- Appropriate use of tools and equipment.
- Colour corresponding to specifications.
- Taking care to provide the client with samples.
- Correct feasibility assessment (ambient temperature).
- Taking all specifications into account.
- Preparing the workplace appropriately.
- Workplace cleanliness.
- Performing reaction tests correctly.
- Appropriate use of tools and equipment.
- Colour corresponding to specifications.
- Taking care to provide the client with samples.

TASK 14 SCAFFOLDING	
Performance Criteria	
- Adequate preparation of the work area. - Complete inspection of equipment. - Appropriate delimitation of the work area. - Meeting safety standards and those of the company.	- Ability to work in a team. - Daily check of scaffolding stability. - Working within the time allowed.

2.4 FUNCTIONS

Functions correspond to a set of related tasks. This set may be defined by the work's results or by a sequence of steps.

For the trade of painter, the participants agreed with the four functions presented below. Accordingly, the painter's work includes:

- a **surface preparation** function grouping the following tasks:
  1. Prepare wood surfaces;
  2. Prepare limestone surfaces;
  3. Prepare metal surfaces;
  4. Prepare synthetic surfaces;
  5. Prepare wallboard surfaces;

- a **surface finishing** function grouping the following tasks:
  6. Apply paints;
  7. Apply multiple-constituent film-forming products;
  8. Apply gritty film-forming compounds;
  9. Apply varnishes and stains;
  10. Apply coatings;
  6. Reproduce letters, numbers and shapes;

- a **special finishes** function grouping the following tasks:
  11. Apply gold and silver leaves;
  7. Apply faux finishes;

- a **scaffolding** function involving the following task:
  14. Scaffolding.

3. QUANTITATIVE DATA ON TASKS

3.1 OCCURRENCE

Occurrence data concern the percentage of painters[24] who perform a task in the same workplace[25]. The data presented in the tables below are averages of the participants' results. However, they provide information on tasks performed not only by the painters attending the workshop, but also by all painters working in the companies represented.

Table 3.1 Occurrence of Tasks

Task	Occurrence
1. Prepare wood surfaces	87.2%
2. Prepare limestone surfaces	78.4%
3. Prepare metal surfaces	79.6%
4. Prepare synthetic surfaces	57.5%
5. Prepare wallboard surfaces	60.3%
6. Apply paints	81.4%
7. Apply multiple-constituent film-forming products	58.2%
8. Apply gritty film-forming compounds	42.8%
9. Apply varnishes and stains	59.3%
10. Apply coatings	40.6%
11. Reproduce letters, numbers and shapes	41.0%
12. Apply gold and silver leaves	2.3%
13. Apply faux finishes	15.2%
14. Scaffolding	78.4%

24. The data also include apprentices.
25. It should be emphasized that for one of the companies represented, the large number of painters employed (100) made it impossible to collect data, since the participant could not assess the time distribution of all those persons. The averages were therefore calculated for 10 companies rather than 11.

The data compilation yielded the following findings:

- For the institutional and commercial sector:
  - 9 of the companies represented work in this sector;
  - tasks 4, 8 and 11 are performed in only 9 of the companies represented;
  - task 12 is performed in only 1 of the companies represented;
  - task 13 is performed in only 5 of the companies represented.

- For the industrial sector:
  - 8 of the companies represented work in this sector;
  - tasks 4, 5, 8, 10 and 11 are performed in only 7 of the companies represented;
  - task 12 is performed in none of the companies represented;
  - task 13 is performed in only 4 of the companies represented.

- For the civil engineering and roadwork sector:
  - 4 of the companies represented work in this sector;
  - tasks 1, 2, 3, 5, 9, 10 and 14 are performed in only 4 of the companies represented;
  - tasks 4 and 7 are performed in only 3 of the companies represented;
  - task 12 is performed in none of the companies represented.

- For the residential sector:
  - all the companies represented work in this sector;
  - tasks 3, 7 and 9 are performed in only 9 of the companies represented;
  - tasks 4 and 11 are performed in only 8 of the companies represented;
  - task 7 is performed in only 6 of the companies represented;
  - task 12 is performed in only 1 of the companies represented;
  - task 13 is performed in only 5 of the companies represented.

3.2 WORK TIME

Work time, also expressed in percentage, represents the time allocated by each participant to each task, on an **annual** basis.

Table 3.2 Work Time Spent on Tasks

Task	Work Time
1. Prepare wood surfaces	5.6%
2. Prepare limestone surfaces	15.6%
3. Prepare metal surfaces	10.9%
4. Prepare synthetic surfaces	1.2%
5. Prepare wallboard surfaces	10.7%
6. Apply paints	27.1%
7. Apply multiple-constituent film-forming products	9.6%
8. Apply gritty film-forming compounds	2.6%
9. Apply varnishes and stains	5.4%
10. Apply coatings	3.1%
11. Reproduce letters, numbers and shapes	2.2%
12. Apply gold and silver leaves	0.6%[26]
13. Apply faux finishes	0.9%[27]
14. Scaffolding	4.9%

We know that task 6 occupies the highest percentage of the participants' work time, with 27.1%, all sectors taken together. Again for all sectors, surface preparation tasks – tasks 1, 2, 3, 4 and 5 – occupy 44.0% of the participants' time, whereas product application tasks (6, 7, 8 and 9) count for 44.7% of total work time. So we observe that the participants spend as much time preparing surfaces as coating them with paint, multiple-constituent products, gritty compounds, varnishes or stains.

26. Only one of the painters consulted performs this task.
27. Only three of the painters consulted perform this task.

The application of coatings, vinyl or other products occupies only 3.1% of the participants' work time, whereas the decoration and identification of surfaces count for 2.2%. Producing special finishes, which groups tasks 12 and 13, represents only 1.5% of the participants' work time. Finally, the latter allocate on average 4.9% of their work time to scaffolding.

3.3 IMPORTANCE AND DIFFICULTY OF THE TASKS

The **importance** of a task is estimated according to the more or less harmful consequences of performing a task poorly or not at all. The importance is assessed according to the following scale:

1.Not important:	Performing the task less successfully does not lead to consequences for the result's quality, the costs, health and safety, etc.;
2. Not very important:	Poor execution of the task may entail minimal costs, lead to an unsatisfactory result or involve risks of injury, minor accidents, etc.;
3. Important:	Poor execution of the task may entail substantial additional costs, injuries, accidents, etc.;
4. Very important:	Poor execution of the task may entail very major consequences regarding costs, safety, etc.

A task's **difficulty** is assessed according to the following scale:

1. Very easy:	The task involves little risk of error; it requires no notable physical or mental effort. Performing the task is less difficult than average;
2. Easy:	The task involves a few risks of error; it requires minimal physical or mental effort;
3. Difficult:	The task involves many risks of error; it requires a good physical or mental effort. Performing the task is more difficult than average;
4. Very difficult:	The task involves a high risk of error; it requires substantial physical or mental effort. The task is among the most difficult in the trade.

Data presented in the table below result from the averages of the participants in the workshop.

Table 3.3 Importance and Difficulty of Performing the Tasks

Task	Importance	Difficulty
1. Prepare wood surfaces	3.5	1.8
2. Prepare limestone surfaces	3.6	2.6
3. Prepare metal surfaces	3.5	2.4
4. Prepare synthetic surfaces	3.7	2.8
5. Prepare wallboard surfaces	3.6	2.7
6. Apply paints	3.7	1.8
7. Apply multiple-constituent film-forming products	3.8	3.0
8. Apply gritty film-forming compounds	3.9	2.8
9. Apply varnishes and stains	3.6	2.3
10. Apply coatings	3.8	2.9
11. Reproduce letters, numbers and shapes	3.5	2.6
12. Apply gold and silver leaves	4	4
13. Apply faux finishes	3.7	3.6
14. Scaffolding	4	2.3

4. KNOWLEDGE, SKILLS AND ATTITUDES

The occupational analysis has identified a number of knowledge areas, skills and attitudes necessary to performing the tasks, and transferable by being applicable to a variety of tasks and situations.

In the following pages we present the knowledge areas, skills and attitudes that the participants consider essential for performing the tasks of the trade of painter.

4.1 KNOWLEDGE

Languages and communication

Knowledge of basic principles of interpersonal communication is necessary to the painter's work. Painters must:

- express themselves clearly, to transmit instructions or information to their colleagues or workers in other construction trades;
- work in a team with their colleagues;
- demonstrate good listening skills in dealing with their colleagues and, occasionally, with the client. Indeed, in some cases, particularly in the residential sector, the painter may have to inform the client or reassure him about deadlines being met or the quality of work.

Painters must be able to read instructions to do their work correctly and meet the specifications. They usually express themselves in French. However, in some Québec areas, English is used with clients, project managers or colleagues.

Laws and regulations

Painters must know:

- the parts of the Building Code that apply to their work;
- manufacturer standards for products (according to their characteristics);
- the environmental standards for using various cleaning products, thinners, paints, etc.

Mathematics

Painters use the four basic mathematical operations to do their work. Among other things, they have to calculate product proportion and quantities, and to estimate the necessary application time according to the surfaces and volumes to be covered.

Mechanics

Painters use basic mechanical concepts during current maintenance, cleaning or minor repairs of their electrical or pneumatic equipment (pump, vacuum cleaner, filters, pipes, etc.).

Light carpentry

Basic carpentry concepts are applied during surface preparation tasks. Several examples of this type of work were mentioned by the participants:

- replacing a tile;
- repairing a damaged wall;
- plaster repairs;
- cutting or repairing a moulding;
- adjusting a door knob;
- retouching after work done by workers in other construction trades.

Products

Knowledge of the various types of paints, primers, varnishes, stains, multiple-constituent products, thinners and cleaners, as well as their respective characteristics, is essential for practicing the trade of painter. Painters have to know the reactions and peculiarities of products when applying them on various surfaces. They also have to differentiate textures and finishes. In addition, to choose the product to be applied on the surface, they must be able to recognize the type of product that has already been applied there.

Occupational health and safety

Knowledge and application of occupational health and safety regulations are essential to the trade. Painters must adopt a safe behaviour in doing their work. Accordingly, they may have to take supplementary training in order to use certain types of equipment.

Theory of colours

Knowledge of concepts related to the theory of colours (colour chart, contrasts, etc.) is useful to painters, whatever the sector in which they are working.

4.2 SKILLS

Skills mean know-how. They are divided into three categories: cognitive, motor and perceptual.

Cognitive skills

Cognitive skills involve intellectual strategies used in doing their work. The main cognitive skills necessary to the trade of painter are the following:

- problem resolution (finding solutions to technical problems or constraints);
- reasoning ability (work sequence for applying products);
- planning ability (to meet deadlines or gain time).

Motor skills

Motor skills involve gestures and movements. The main motor skills necessary to the trade of painter are the following:

- having a good physical capacity;
- demonstrating physical endurance;
- working quickly;
- having a “steady hand”;
- not being afraid of heights.

Perceptual skills

Perceptual skills are sensory skills enabling a person to perceive by his senses what is happening in his environment. The main perceptual skills necessary to the trade of painter are the following:

- sense of observation, to distinguish the various finishes and colours;
- ability to detect noises that provide information about paint consumption;

- well-developed sense of smell, to distinguish thinners, removers, solvents, etc.; if there is no label on a container, the painter must be able to recognize the various products;
- precise sense of touch, to check, among other things, the texture of plaster and materials, as well as the quality of surfaces.

4.3 ATTITUDES

Attitudes are a way of acting, reacting and relating with others or with one's environment. They involve personal skills. The main attitudes necessary to the trade of painter are the following[28]:

- good judgement;
- quick understanding of instructions;
- resourcefulness;
- reliability;
- attention to detail;
- patience;
- perseverance;
- punctuality;
- initiative;
- sense of responsibility;
- taking care to work cleanly;
- tolerance for the risks of getting dirty when working;
- vigilance.

28. The attitudes are not listed in order of importance.

5. TRAINING SUGGESTIONS

The participants in the workshop made suggestions about the various aspects of training. Those suggestions are:

- Present to students, at the start of their training, all construction industry sectors and work environments related to the trade of painter, to help guide them regarding their work opportunities.

- Speak more about the various specializations, such as that of painter-decorator or painter-craftsman. It is hoped that the apprentice has the opportunity to know about all the possible specializations, so as to make an informed choice.

- Ensure that trainers' qualifications are updated according to the new practices of the trade.

- Update application techniques and add practical activities, such as painting a ceiling with a roller.

- Reduce the hours spent on the arts and increase those regarding the use of equipment, for example the paint gun.

- Increase the learning time spent on basic techniques.

- Integrate an on-the-job training session to the curriculum.

- Insist on the importance of versatility for painters, by enabling students to be competent in all facets of the trade.

Annexes

Annex 1

RAW MATERIALS, TOOLS AND EQUIPMENT

During the workshop, the participants were shown lists of raw materials, tools and equipment from the 1987 work situation analysis[29] and the Red Seal analysis of interprovincial standards[30]. In the following pages are, for each task, the list of raw materials, tools and equipment that was validated by the participants.

Table A.1 Raw Materials, Tools and Equipment

TASK 1	PREPARE WOOD SURFACES

Raw Materials

- Patching material (with oil and water)
- Filler
- Primer (with oil and water)
- Sandpaper
- Preservative
- Gum lac
- Thinners
- Solvents
- Stain
- Paint remover

Tools and Equipment

- Propane cylinder with torch
- Brushes
- Pails
- Putty knives
- Can hook
- Sanding sponge
- Spray equipment
- Fire extinguisher
- Scrapers
- Razor blade
- Files
- Hammers
- Brushes
- Pliers, wrenches
- Trays and rollers
- Belt and vibrator sanders
- Drop cloths
- Screwdrivers

TASK 2	PREPARE LIMESTONE SURFACES

Raw Materials

- Patching material (with oil and water)
- Sand or abrasive
- Primer (with oil and water)
- Hydrochloric acid
- Commercial soaps
- Sandpaper
- Solvents
- Thinners
- Cotton cloth

29. Ministère de l'Éducation, *Peintre en bâtiment: Rapport d'analyse de la situation de travail*, Quebec City, 1987.
30. Human Resources and Skills Development Canada, *Occupational Analyses Series: Painter and Decorator.*

TASK 2 PREPARE LIMESTONE SURFACES *(Cont'd)*

Tools and Equipment

- Scrapers
- Putty knives
- Stiff bristle brushes
- Plaster knives
- Mixing vessels
- Gas cylinder and torch
- Heat sensors
- Brushes
- Trays and rollers
- Spray equipment
- Sandblasting equipment
- Drop cloths
- Humidity meter
- Spray tip and housing
- Wire brush
- Sponges
- Hammers
- Vacuum cleaner
- Compressors
- Dust collector
- Shotblaster
- Pressure washers
- Grinders
- Drills
- Mixers
- Fans
- Needle guns

TASK 3 PREPARE METAL SURFACES

Raw Materials

- Glass particles
- Sand (various sizes)
- Corn Grains
- Sandpaper
- Water
- Steel grit
- Various cleaning chemicals
- Primer
- Thinners
- Solvents
- Patching material (epoxy, fibreglass)

Tools and Equipment

- Sandblasting equipment (diesel or electric)
- Discharge pipes (water, air, abrasives)
- Blasting nozzles
- Air compressor
- Water compression pumps
- Scrapers
- Wire brushes
- Plaster knives
- Wrench sets
- Hammers
- Shovel
- Torches
- Propane cylinder
- Brushes
- Drop cloths
- Grinding scissors
- Pneumatic drills
- Needle guns
- Grinder
- Air monitoring equipment
- Screwdrivers (basic tools)
- Nut drivers

TASK 4 PREPARE SYNTHETIC SURFACES

Raw Materials

- Soap
- Detergent
- Patching material (with water or oil)
- Sandpaper
- Primer
- TSP degreaser (trisodium phosphate)

TASK 4 PREPARE SYNTHETIC SURFACES (Cont'd)

Tools and Equipment

- Putty knives
- Scrapers
- Plaster knives
- Pails
- Stepladders
- Brushes
- Brushes
- Trays and rollers
- Drop cloths
- Pressure washer
- Sanding block
- Tack cloth

TASK 5 PREPARE WALLBOARD SURFACES

Raw Materials

- Paper tape (pasted or not)
- Joint cement (powder or paste)
- Angle irons
- Nails or screws
- Contact adhesive
- Sandpaper

Tools and Equipment

- Pans
- Shields
- Coating knives (various sizes)
- Hammers
- Gypsum board screwdrivers
- Cement applicators (straight and for corner)
- Sanding blocks
- Tarpaulins or protective envelopes
- Gypsum sheet pry bars
- Sponges
- Steel wool
- Rotary cement peener (cement hopper)
- Drills
- Fans
- Sanders (pole, hand)
- Extension cord
- Pails

TASK 6 APPLY PAINTS
TASK 7 APPLY MULTIPLE-CONSTITUENT FILM-FORMING PRODUCTS

Raw Materials

- Finishing paint (with water or oil)
- Epoxy
- Conditioners and primers
- Sealer
- Solvents
- Sandpaper
- Thinners

Tools and Equipment

- Trays and rollers
- Drop cloths
- Vacuum cleaner
- Spray equipment
- Masking tape
- Screwdrivers
- Spinner
- Hand masking machine
- Tarpaulins or protective envelopes
- Trays
- Broom
- Mop
- Pliers, wrenches
- Stepladders
- Ladders
- Felt marker
- Hammers
- Spirit level
- Laser level
- Cutters
- Sandpaper
- Shovel
- Brushes (various types of natural and synthetic bristle brushes)

- Stir stick
- Sanding block
- Wire brush
- Cadres de Rollers, type cage chamois
- Nail punch
- Tack cloth
- Adjustable wrenches (various sizes)
- Alan keys
- Chalk line
- Putty knife
- Utility knife
- Broad knives
- Can hook
- Sanding sponges
- Sponges
- Brush and roller spinner
- Plumb bob
- Scrapers
- Roller grids
- Wrench sets
- Razor blade
- Files
- Paint agitators (stirrer)
- Rotary peener
- Compressors
- Dust collector
- Dehumidifier
- Grinders (angle grinder, die grinder)
- Pliers
- Caulking gun
- Duster
- Sanders (pole, hand)
- Dust pan
- Scraper
- Extension cord
- Ruler
- Rollers
- Nail shoes
- Pails
- Apron
- Hawk
- Paint strainers
- Paint pads
- Extension poles
- Drop sheets
- Nut drivers
- Screwdrivers
- Air hose repair kit
- Trowels
- Abrasive blasting equipment – deadman switch (electric or air), nozzle (venture, straight bore), blast cabinet, blasting pot, blast hoses, blasting hood, hydroblast equipment, centrifugal blasting equipment
- Drills
- Needle guns
- Heat guns
- Air dryer
- Fans

Spray Equipment

- Spray tips and housing
- Air compressor
- Spray lines
- Spray whips and swivels
- Pump filters
- Spray hoods
- Paint gun
- Electrostatic paint gun
- Low pressure spray guns
- Plural component pumps
- Airless pumps
- Air assisted airless system
- Conventional air spray system
- Texture spray machine
- Spray gun extensions

Measuring/Testing Equipment

- Yard stick
- Measuring cup

TASK 8 APPLY GRITTY FILM-FORMING COMPOUNDS

Raw Materials

- Latex primer
- Sealer
- Paste
- Solvent
- Gritty compounds
- Plastic paints
- 36-in. paper
- Plaster of Paris
- Sandpaper
- Dyes
- Paint
- Masking tape
- Polythene

Tools and Equipment

- Brushes
- Trays and rollers
- Sponges
- Trowels
- Stiff bristle brushes
- Steel brushes
- Combs
- Brooms
- Sand bellows
- Spreaders
- Cold chisels
- Hand masking machine
- Trays
- Hammers
- Heat guns
- Rulers
- Chalk line
- Measuring tape
- Spray equipment
- Drop cloths
- Cloths
- Crushed paper
- Pails
- Plumb bob
- Levels
- Paint agitator
- Vacuum cleaner
- Drills

TASK 9 APPLY VARNISHES AND STAINS

Raw Materials

- Acids (in liquid solution or crystals)
- Stain
- Patching material
- Varnishes
- Filler
- Sandpaper (dry and water)
- Danish oil
- Steel wool
- Masking tape
- Dye
- Resin sticks
- Gum lac
- Thinner
- Paint remover
- Paint (oil and water)
- Epoxy
- Lacquer
- Polishing oil
- Wax

Tools and Equipment

- Sanders (vibrator and belt)
- Brushes
- Trays and rollers
- Putty knives
- Plaster knives
- Scrapers
- Spreaders
- Mechanical stirrers
- Spray equipment
- Air compressor
- Hammers
- Screwdrivers
- Pliers, wrenches
- Cloths
- Sponges
- Pails
- Rubber gloves
- Drop cloths
- Sheepskins
- Mechanical polishers (vibrating or circular)

TASK 10 APPLY COATINGS

Raw Materials

- Paste
- Paper, fabric, vinyl
- Cast paper
- Velvet paper
- Metallized paper
- Synthetic compounds
- Wood lathes
- Dowel pins, screws
- Wood glue
- Sandpaper
- Filler
- Stain
- Danish oil
- Sealer
- Wax
- Gum lac
- Solvents
- Alcohol
- Jute
- Paints

Tools and Equipment

- Brushes
- Trays and rollers
- Coating knives
- Pails and sieves
- Wallpaper table
- Measuring tape
- Rulers
- Plumb bob
- Crayons, Chalk
- Levels
- Chalk line
- Wallpaper brushes
- Heat guns
- Precision knife
- Cutters
- Razor blades
- Wheels
- Troughs for soaking prepasted paper
- Hammers
- Screwdrivers
- Staplers
- Sponges
- Paint agitator
- Vacuum cleaner
- Drills

Specialty wall covering tools

- Hypodermic needle/syringe
- Paste brush
- Shears/scissors
- Water trough/dams
- Steam stripper
- Pasting machine
- Trimming wheel
- Plastic smoother
- Smoothing brush
- Glue gun
- Seam rollers
- Pounce wheels
- Vinyl table
- Paste table

TASK 11 REPRODUCE LETTERS, NUMBERS AND SHAPES

Raw Materials

- Paint (oil and latex)
- Grease pencil (metal surface)
- Masking tape
- Dyes
- Alcohol
- Linseed oil
- Gum lac
- Baling and marking paper
- Chalk
- Etamine (cheese cloth)
- Oil
- Reflecting paint
- Grease

Tools and Equipment

- Drop cloths
- Scissors
- Squares
- Plaster knives
- Wheeled alignment tool
- Spray equipment

TASK 11 REPRODUCE LETTERS, NUMBERS AND SHAPES *(Cont'd)*

- Rulers
- Compass
- Stencil knives
- Glass
- Sharpening, sanding stone
- Spinner
- Hand masking machine
- Trays
- Broom
- Mop
- Stir stick
- Sanding block
- Wire brush
- Cloths
- Roller cages, leather chamois
- Nail punch
- Tack cloth
- Adjustable wrenches (various sizes)
- Alan keys
- Chalk line
- Putty knife
- Utility knife
- Broad knives
- Can hook
- Sanding sponges
- Sponges
- Brush and roller spinner
- Plumb bob
- Scrapers
- Roller grids
- Wrench sets
- Razor blade
- Files Trays and rollers
- Traffic cones
- Chalk line
- Vacuum cleaner
- Felt marker
- Hammers
- Spirit level
- Cutters
- Sandpaper
- Shovel
- Brushes (natural and synthetic bristles)
- Pliers
- Caulking gun
- Duster
- Sanders (pole, hand)
- Dust pan
- Extension cord
- Ruler
- Rollers
- Pails
- Apron
- Hawk
- Paint strainers
- Paint pads
- Extension poles
- Drop sheets
- Nut drivers
- Screwdrivers
- Trowels

Spray equipment

- Spray tips and housing
- Air compressor
- Spray lines
- Spray whips and swivels
- Pump filters
- Spray hoods
- Paint gun
- Low pressure spray guns
- Plural component pumps
- Airless pumps
- Air assisted airless system
- Conventional air spray system
- Texture spray machine
- Spray gun extensions

Measuring/Testing Equipment

- Lead test kit
- Humidity meter
- Calculator
- Holiday detector
- Viscosity cup
- Air monitoring equipment
- Dry film thickness gauge
- Humidity meter
- Profilometer
- Sling psychrometer
- Architectural rule
- Yard stick
- Measuring tape
- Measuring cup
- Salt test kit
- Thermometers
- Blotter test kit
- Adhesion tester

TASK 12 APPLY GOLD AND SILVER LEAVES

Raw Materials

- 12 to 23 carat gold leaves
- Silver leaves
- Palladium leaves
- Copper leaves
- Metal leaves
- French alcohol (biting)
- Cotton wool
- Varnishes
- Dyes
- Sandpaper
- Paint
- Masking tape
- Solvents
- Gum lac
- Mineral spirit

Tools and Equipment

- Various brushes
- Trays and rollers
- Brushes
- Pails
- Spray equipment
- Mixing paddle
- Squirrel hair brushes
- Cushions
- Gilding brushes
- Steel wool
- Scaffoldings (if applicable)
- Knives (various sizes)

TASK 13 APPLY FAUX FINISHES

Raw Materials

- Patching material
- Paint solvents
- Masking tape
- Sandpaper (dry and water)
- Joint cement
- Glacis (oil, water, beer, alcohol)
- Linseed oil
- Varnishes
- Gum lac
- Alcohol
- Wax (liquid, paste)
- Stain
- Filler
- Acid
- Steel wool
- Thinners
- Dyes (oil, water)

Tools and Equipment

- Various brushes
- Trays and rollers
- Brushes
- Pails
- Mixing paddle
- Knives (various sizes)
- Badger blender
- Stencil brush
- Stencil knife
- Natural (sea) sponges
- Stipplers
- Mottling brush
- Gilding brush
- Squirrel hair brushes
- Cushions
- Gilding brushes
- Steel wool
- Fitch brushes
- Goose feathers
- Stencils
- Projectors
- Check roller
- Graining combs
- Notched spreader
- Fan brush
- Artistic brushes

TASK 14 SCAFFOLDING

Rigging and Hoisting Equipment
- Stationary scaffolds
- Mechanical scaffolds
- Rolling scaffolds
- Flying scaffolds
- Aluminium boards
- Aerial platforms (giraffe and scissor)
- Saddles

Simple Scaffolds
- Stepladders
- Ladders
- Trestles
  - with square and shores
  - single-post
  - double-post

Multi-Component Scaffolds
- Metal frames
- Tubes and rings
- Swinging scaffolds
  - saddle
  - flying
  - etc.

Components
- Frames and ladders
- Spacers
- Planks
- Base plates
- Wheels
- Parapets
- Screw jacks
- Consoles
- Orthogonal rings
- Life lines
- Safety harness
- Rope grab

Tools
- Adjustable wrenches
- Alan keys
- Wrench sets
- Hammers
- Shovel
- Nut drivers
- Screwdrivers

Measuring/Testing Equipment
- Measuring tape

SET OF TASKS

Personal Protective Equipment and Safety Equipment
- Steel toe boots
- Fresh air hood
- Hard hat
- Coveralls
- Air conditioner
- Rope grab
- Fire blanket
- Fume and toxic gas detector
- Fall arrest equipment
- Eye wash station
- Face shields
- Gloves
- Safety vest
- Fire hoses
- Goggles
- Safety glasses
- Masks (particle, vapour)
- Spill kits
- Ear plugs and muffs
- Knee pads
- Toe guards
- Air purifiers
- Respirators
- Warning tapes
- Signage
- First aid equipment
- Exhaust fan

Annexe 2

OCCUPATIONAL HEALTH AND SAFETY GRID

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Table A.2 Painters' Occupational Health and Safety Issues

No.	Risk Sources	Effects on Health and Safety	Means of Prevention
1	Risk of same-level (sliding) - Housekeeping - Sliding surfaces (rain, oil, snow)	- Collisions - Contusions - Fractures - Bruises	- Cleaning workplaces (picking up debris). - Absorbing oils. - Applying abrasives to make the surface less slippery.
2	Fall-from-height hazards a) Using a ladder b) Using a stepladder c) Using aerial automotive work platforms d) Using a small mobile scaffold (Baker) e) Using a metal frame scaffold f) Using a flying scaffold	- Collisions - Internal injuries - Fractures - Bruises - Mort - Psychological and physical after-effects	a) Rising and descending in front of equipment. - Using a class 1 ladder. - Having 3 support points. - Observing the angle of inclination. - Rising and descending while holding bars and not side rails. - Remain between the side rails. b) Using a class 1 stepladder with a rated payload of 250 lb. - Ensure that spreaders are fully open. - Install on a firm level surface. - Choose according to the height to be reached. c) Wear the shock-absorbing harness in the jib boom platform. - Delimit the work area, to avoid the risk of collision. - Keep the feet on the platform floor. - Rise and descend in front of the equipment, with 3 support points. - Keep the platform access and floor clean. d) Use the wheel lock device with each use. - Descend from the mobile scaffold before moving it.

No.	Risk Sources	Effects on Health and Safety	Means of Prevention
2	Fall-from-height hazards (cont'd)		e) In case of exposure to a risk of falling more than 3 metres, install a parapet or wear an energy-absorbing harness while using an anchor with a breaking strength of 18 kN or a vertical lifeline with safety code specifications. - Check the bearing capacity, install beds and jack screws if the site is sloped. - For each scaffolding section, make sure to install vertical locks. - Use safe means of access. - Fasten to the structure, which should be installed at intervals not exceeding 3 times the minimum scaffold width. - Use planks carrying the NLGA seal of approval and assemble a floor of sufficient width (min. 470 mm), while ensuring that the distance between the structure and the floor is less than 350 mm.
3	Chemical Hazards - Solvents - Paints and varnishes (solvent-based, aqueous phase, with lead) - Acids - Silica dust (sandblasting) - Epoxy - Acetone (polyurethane) - Varsol	- Skin diseases (dermatoses) - Intoxication of the organism - Respiratory illnesses	- Having taken WHMIS training. - Keeping the specification sheet in the place of work. - Carrying respiratory protection and filters appropriate to contaminants. - Ensuring mechanical or natural ventilation. - Wearing personal protective equipment (gloves, coveralls). - Wearing safety glasses or a visor. - Ensuring the availability of emergency equipment (eye-wash station, fire extinguisher, etc.).
4	Ergonomic Hazards - Postural constraints or statis - Repeated movements - Handling - Difficulties of the task - Vibrations (hand-arm system)	- Musculoskeletal lesions - Sprains - Hernias - Fatigue, discomfort, pain	- Rotating tasks when possible. - Favouring the purchase of tools limiting vibrations to a minimum. - Using handling equipment. - Knowing handling techniques.
5	Electrical Hazards - Contacts with overhead electric lines - Electrical tools	- Burns - Electrification - Electrocution	- Maintaining the minimum distances of approach prescribed by the health and safety code. - Complying with the collective agreement with the operating company. - Using double insulation. - Ensuring the good condition of the extension cord.
6	Noise hazards	- Hearing loss - Occupational deafness	- Using a compressed air compressor. - Using a paint gun.

Table A.3 Risk Sources Related to Painters' Tasks and Operations

Legend

0	The risk is nil.
+	The risk is low.
++	The risk is average.
+++	The risk is high.

1. Risk levels are noted according to exposure to risk sources, not according to the gravity of effects of personal health and safety.

Tasks and Operations		Same-Level Fall Hazards	Fall-from-Height Hazards	Chemical Hazards	Ergonomic Hazards	Electrical Hazards	Noise Hazards
TASK 1	**Prepare wood surfaces**						
1.1	Examine the work to be done	++	++	0	0	0	0
1.2	Prepare the equipment	+	0	0	+	0	0
1.3	Protect the other surfaces	+++	+	0	+	0	0
1.4	Clean the surfaces	+++	+++	++	++	0	+
1.5	Remove old materials, if applicable	+++	+++	++	++	++	++
1.6	Prepare products	+++	+++	+++	++	0	0
1.7	Repair surfaces, if applicable	+++	+++	++	++	++	++
1.8	Sand, if applicable	+++	+++	++	++	++	++
1.9	Apply the primer, if applicable	+++	+++	+++	++	++	++
1.10	Check tools and equipment	+++	+	+	++	0	0
TASK 2	**Prepare limestone surfaces**						
2.1	Examine the work to be done	++	++	0	0	++	++
2.2	Prepare the equipment	++	++	++	0	++	+
2.3	Protect the other surfaces	++	+	++	++	0	0
2.4	Repair surfaces if applicable	++	+++	+	++	+	+
2.5	Sand, if applicable	++	+++	++	++	++	+++
2.6	Clean the surfaces	+++	+++	+++	+++	++	0
2.7	Prepare products	+	+	+++	0	0	0
2.8	Apply the primer	+++	+++	+++	+++	+++	+++
2.9	Check tools and equipment	+	+	++	0	0	0
TASK 3	**Prepare metal surfaces**						
3.1	Examine the work to be done	+	+	0	0	0	0
3.2	Prepare the equipment	+	+	++	0	0	0
3.3	Protect the other surfaces	++	++	0	++	++	0
3.4	Repair surfaces, if applicable	++	++	+++	+++	++	++
3.5	Sand, if applicable	+++	+++	+++	+++	+++	++
3.6	Clean the surfaces	+++	+++	+++	+++	++	++
3.7	Prepare products	+	+	+++	0	0	0
3.8	Apply the primer, if applicable	+++	+++	+++	+++	+++	+++
3.9	Check tools and equipment	+	+	+++	+	0	++

Tasks and Operations		Same-Level Fall Hazards	Fall-from-Height Hazards	Chemical Hazards	Ergonomic Hazards	Electrical Hazards	Noise Hazards
TASK 4	**Prepare synthetic surfaces**						
4.1	Examine the work to be done	+	+	0	0	0	0
4.2	Prepare the equipment	+	+	++	++	0	0
4.3	Protect the other surfaces	++	++	0	++	0	0
4.4	Repair surfaces, if applicable	++	++	++	++	++	++
4.5	Scrape or sand	+++	+++	+++	+++	+++	+++
4.6	Clean the surfaces	+++	+++	+++	+++	+++	+++
4.7	Prepare products	+	+	+++	0	0	0
4.8	Apply the primer	+++	+++	+++	+++	+++	+++
4.9	Check tools and equipment	+	+	++	0	0	++
TASK 5	**Prepare wallboard surfaces**						
5.1	Examine the work to be done	+	+	0	0	0	0
5.2	Prepare the equipment	+	+	++	++	0	0
5.3	Protect the other surfaces	++	++	0	+	0	0
5.4	Install metal corners	++	++	+	++	0	0
5.5	Apply joint tape	+++	+++	+	+++	0	0
5.6	Apply the sealant	+	+	+++	++	0	0
5.7	Smooth the surface	++	++	0	+++	0	0
5.8	Apply the 2nd and 3rd layers of sealant	+	+	+++	++	0	0
5.9	Sand between layers of sealant and at the end	+++	+++	+++	++	0	++
5.10	Apply the primer	+	+	++	0	0	0
5.11	Check tools and equipment	+++	+++	+++	+++	0	++
TASK 6	**Apply paints**						
6.1	Check the condition of surfaces	+++	+++	0	++	++	0
6.2	Apply the necessary finishing coat(s)	+++	+++	+++	+++	+++	+++
6.3	Sand between coats, if applicable	+++	+++	+++	+++	+++	+++
6.4	Check tools and equipment	+	+	++	0	0	0
6.5	Store the equipment and clean the premises	++	+	++	0	0	0
TASK 7	**Apply multiple-constituent film-forming products**						
7.1	Check the condition of surfaces	+	+++	0	0	+	0
7.2	Prepare products	+	+	+++	0	0	0
7.3	Apply the necessary finishing coat(s)	++	+++	+++	+++	++	+++
7.4	Sand between coats, if applicable	++	+++	+++	+++	++	+++
7.5	Check tools and equipment	+	0	++	0	0	0
7.6	Store the equipment and clean the premises	++	0	++	+	+	0
TASK 8	**Apply gritty film-forming compounds**						
8.1	Mask, if necessary	++	++	0	++	0	0
8.2	Prepare the compound (stain, if necessary)	++	++	+++	+++	0	0
8.3	Apply the compound	+++	+++	+++	+++	+++	+++
8.4	Apply the 2nd coat, if applicable	+++	+++	+++	+++	+++	+++
8.5	Remove masking tape	++	++	0	++	0	0

Tasks and Operations		Same-Level Fall Hazards	Fall-from-Height Hazards	Chemical Hazards	Ergonomic Hazards	Electrical Hazards	Noise Hazards
TASK 8	**Apply gritty film-forming compounds *(Cont'd)***						
8.6	Paint, if applicable	+++	+++	+++	+++	+++	+++
8.7	Check tools and equipment	+	+	++	0	0	0
8.8	Store the equipment and clean the premises	++	+	0	0	0	0
TASK 9	**Apply varnishes and stains**						
9.1	Decorate surfaces, if necessary	+++	+++	+++	+++	+++	+++
9.2	Repair defects	++	++	++	+++	0	++
9.3	Apply fillers and stains	+++	+++	+++	+++	0	0
9.4	Apply varnishes	+++	+++	+++	+++	++	++
9.5	Polish surfaces	+++	+++	+++	+++	++	++
9.6	Check tools and equipment	+	+	++	0	0	0
9.7	Store the equipment and clean the premises	+	+	++	0	0	0
TASK 10	**Apply coatings**						
10.1	Read the instructions	0	0	0	0	0	0
10.2	Take measurements and plan for seams	0	0	0	++	0	0
10.3	Check and prepare the equipment	0	0	0	0	0	0
10.4	Prepare the paste for the primer paper, if applicable	0	++	++	0	0	0
10.5	Apply primer paper, if applicable	+	++	+	+++	0	0
10.6	Prepare the paste for the coating, if applicable	0	++	++	0	0	0
10.7	Paste or soak the sheets	0	++	+	++	0	0
10.8	Apply the sheets	+	++	+	+++	0	0
10.9	Cut excess material	+	++	0	++	0	0
10.10	Roll the joints	+	++	0	++	0	0
10.11	Dry excess paste	+	++	+	++	0	0
10.12	Check surface protection	+	++	0	++	0	0
10.13	Check tools and equipment	+	0	+	0	0	0
10.14	Store the equipment and clean the premises	+	0	+	+	0	0
TASK 11	**Reproduce letters, numbers and shapes**						
11.1	Trace, measure, draw	++	+++	0	+++	0	0
11.2	Prepare paints	0	0	+++	0	0	0
11.3	Mask, if desired	++	+++	0	++	0	0
11.4	Apply the master colour, if applicable	++	+++	+++	+++	0	++
11.5	Apply the following colours (with or without masking)	++	+++	+++	+++	0	++
11.6	Sand, if applicable, and clean	++	+++	+++	+++	0	++
11.7	Apply the protective layer, if applicable	++	+++	+++	+++	0	++
11.8	Check tools and equipment	0	0	++	+	0	0
11.9	Store the equipment and clean the premises	+++	0	+	++	0	0

Tasks and Operations		Same-Level Fall Hazards	Fall-from-Height Hazards	Chemical Hazards	Ergonomic Hazards	Electrical Hazards	Noise Hazards
TASK 12	**Apply gold and silver leaves**						
12.1	Prepare and stain the mordant	+++	+++	+++	+++	0	0
12.2	Apply the mordant	+++	+++	+++	+++	0	0
12.3	Let it set	+	+	+	0	0	0
12.4	Apply the gold or silver leaf	+++	+++	+	+++	0	0
12.5	Work on the leaf and cut, if applicable	+++	+++	+	+++	0	0
12.6	Apply a layer of gum lac, if applicable	+++	+++	+++	+++	0	0
12.7	Polish	+++	+++	+++	+++	0	0
12.8	Clean the tools and store the equipment	+	+	++	0	0	0
TASK 13	**Apply faux finishes**						
13.1	Prepare the surface	+++	+++	+++	+++	++	++
13.2	Prepare paints or glazes	+	+	+++	0	0	0
13.3	Apply base paints according to the work to be done	+++	+++	+++	+++	+++	+++
13.4	Trace lines and perimeters	++	++	+	+++	0	0
13.5	Apply glazes, colours and varnishes	+++	+++	+++	+++	+++	+++
13.6	Polish surfaces	+++	+++	+++	+++	++	++
13.7	Check tools and equipment	+	+	++	0	0	0
13.8	Store the equipment and clean the premises	+	+	++	0	0	0
TASK 14	**Scaffolding**						
14.1	Analyse the work to be done and the location	+	0	0	0	0	+
14.2	Check the equipment	+	0	0	+	0	0
14.3	Prepare the ground	+	0	0	+	0	0
14.4	Install the bases	+	0	0	+	0	0
14.5	Assemble the elements according to standards	+	+++	0	+++	+++	0
14.6	Dismantle scaffoldings	+	+++	0	+++	+++	0
14.7	Store the equipment	+	0	0	+++	0	0