

ASTHMA IN THE WORKPLACE

PLASTERING  
PREVENTION FACT SHEET  
RF-535



# GET THE FACTS

## AND WORK SMARTER

If you're in the plastering profession, there are health risks you should know about. Getting the facts will help you work smarter and avoid certain practices that could lead to occupational asthma and rhinitis.

Dust from sanding, for instance, is among the main risk factors that can cause or aggravate these respiratory diseases.

READ THE SAFETY  
DATA-SHEETS  
FOR THE PRODUCTS  
YOU USE.  
MAKE SURE YOU  
UNDERSTAND  
WHAT'S IN THEM.

# FIND OUT

## ABOUT ASTHMA

**Asthma is a chronic respiratory disease that makes breathing—especially exhaling—difficult.**

Asthma usually results from allergies to certain substances in your environment. Its main symptoms are coughing, shortness of breath, wheezing and tightness in the chest. Asthma can also be accompanied by symptoms of rhinitis and conjunctivitis.

### Asthma in the workplace can be:

- Caused by exposure to allergenic or irritant substances found in the learning or work environment; or
- Aggravated in somebody who is already asthmatic by these irritant substances or physical factors (e.g., extreme ambient temperatures).

In both cases, the symptoms get worse when the person performs training or work-related tasks that carry a risk of exposure. They decrease or disappear outside the learning or work environment.

## ABOUT RHINITIS

**Rhinitis is a respiratory disease that causes inflammation of the mucous membranes in the nose, stuffy nose, runny nose and eyes, and sneezing.**

# UNDERSTAND

## THE RISK FACTORS

As a plastering student, you perform very similar tasks to those on a construction site. The commercial products and raw materials you use could cause or aggravate asthma.

These products and materials, present when you are sanding joint compound or preparing various mixtures, are the major source of dust and vapour that irritate or sensitize the respiratory tract. You could also be directly exposed to a chemical substance through skin contact.

The amount of products and the mixing techniques (scraper, cement mixer, drill mixer) used can lead to a health risk.



Preparation of mixtures of plaster, acrylic and stucco

Plastering

Sanding of joint compound

Production of moulds for preparing plaster mouldings

IT IS IMPORTANT TO UNDERSTAND WHICH ARE THE HAZARDOUS TASKS AND POTENTIALLY-HARMFUL SUBSTANCES, AND HOW TO CONTROL EXPOSURE.



**CHEMICAL HAZARD**

Inhalation of irritant or sensitizing dust	●	●	●	●
Inhalation of irritant or sensitizing vapors	●		●	●
Skin contact with irritant or sensitizing substances	●	●	●	●

**EXAMPLE OF PRODUCTS**

Portland cement	●	●		●
Hydrated lime	●			●
Slow-setting plaster	●			●
Quick-setting plaster	●			●
Joint compound (pre-mixed)		●	●	
Polyurethane resin				●

**EXAMPLE OF SUBSTANCES**

Calcium oxide	●			●
Hydrated lime	●			●
Calcium sulphate	●			●
Crystalline silica (quartz)	●	●	●	●
Calcium hydroxide	●			●
Calcium carbonate		●	●	●
Isocyanates (MDI)				●

**MEANS OF CONTROL**

Substitution	●		●	
Work method	●	●	●	●
Capture at source	●	●	●	●
General ventilation	●	●	●	●
Respiratory protection	●	●	●	●
Skin protection	●	●	●	●

Informing and training students, apprentices and employees on the risks of exposure to substances in their learning or work environment, the sources of emission, the most hazardous tasks, methods of control (including work practices and methods) and personal protective equipment are key to controlling exposure.

# PROTECT

## YOURSELF RESPONSIBLY

### Protecting your respiratory tract

Use a respirator if you cannot control exposure any other way.

The N95 filtering half-facepiece respirator is recommended to protect against dust and fumes. You could also use other respirators depending on the intensity of exposure, the nature of the task and the degree of effort. For example, wearing an R95 model or a respirator with filter cartridges would be appropriate in the presence of oil mists.

All respirators have a protection factor (PF) that indicates how effective they are and that reflects the theoretical concentration of the contaminant in the environment compared to that inside the mask. So, a factor of 10 indicates that the concentration inside the respirator is 10 times less than that in the learning or work environment.

For a respirator to offer appropriate protection against a particular substance, you have to look at the permissible exposure value (PEV) for that substance, as stated in the Regulation on occupational health and safety (ROHS).

The teaching institution must also set up a training program so that apprentices know how to use a respirator, its limitations and maintenance, and arrange for a personal fitting to adjust the respirator in accordance with the regulations in Quebec.<sup>1</sup>

### A surgical mask is not a respirator



Unlike the N95 filtering half-facepiece respirator, a surgical mask is not designed to filter dust. It is not effective or airtight enough to meet regulations.

### Protecting your skin

As you go about your training or professional work in plastering, irritant substances (such as calcium carbonate and calcium sulphate) may contact your skin. Wearing nitrile gloves will reduce this type of risk. However, they are only appropriate for some mixes. So, it is important to check how effective your choice of protection is with the manufacturer before adopting it.

### Choosing a respirator to suit the intensity of dust or isocyanate you are exposed to\*

Stressor	Intensity	Types of respirators*	PF
Dust	Under 10 times the PEV	N95 filtering half-facepiece Half-facepiece with N95, P95 or P100 filter cartridges	10
	Over 10 times the PEV	Full-facepiece with N95, P95 or P100 filter cartridges Powered air-purifying respirator (PAPR) with HEPA filter cartridges	100
Isocyanates	Sporadic exposure, no spraying	Half-facepiece with organic vapour filter cartridges	10
	Continual exposure or exposure to spraying	Full-facepiece with supplied air	100

\* These recommendations do not apply to all work situations. You must check the respirator's efficiency with the manufacturer or with the person responsible for the respiratory health program.

<sup>1</sup> [www.irsst.qc.ca/fr/\\_publicationirsst\\_862.html](http://www.irsst.qc.ca/fr/_publicationirsst_862.html)

# CONTROL

## THE RISK TO YOUR HEALTH

### Substitute products

First, consider replacing a potentially harmful product with one that reduces or eliminates the risk.

#### Some examples are:

- Use a joint compound that generates heavier dust that adheres to surfaces and hangs less in the air;
- Avoid using polyurethane resin in mould production.

### Work practices

Good work practices and habits can prevent exposure or help to reduce the duration and intensity of exposure. Some examples are:

- Never use an air jet to clean surfaces;
- Stay away from the source of the contaminant and its trajectory.

### Capture at source

This reduces exposure to dust, which is particularly high when sanding joint compound (IRSST report). To protect yourself and the people near your workstation, use a hand-sanding and pole-sanding vacuum control system to sand joint compound.

### Ventilation

General, natural or mechanical ventilation reduces the ambient level of substances and so reduces direct and secondary exposure to allergenic substances associated with hazardous tasks.

On a construction site, workers are exposed to carbon monoxide (CO) from motorized equipment, lift trucks or propane heating systems. Refer to the CSST brochure "Il y a un danger dans l'air : contrôlez le CO !" (2006).



## BE INFORMED—BE CAREFUL

Other health and safety risks related to the plastering profession\*

Category	Risk	Methods of control	Information
Ergonomics	Back loading	Modify the task or workstation Warm up muscles before work Adapt physical conditioning adapted to the task Adopt a suitable work posture	CSST IRSST
Safety	Working at heights on a platform or scaffold	Install safety barrier. Wear a harness	ASP-Construction CSST
Chemical	Asbestos	Adopt a method for working in the presence of asbestos. Wear respiratory protection	
	Crystalline silica of quartz	Adopt a method for working in the presence of crystalline silica. Wear respiratory protection	

\* This list is not exhaustive and does not apply to all workplaces.

## TO LEARN MORE

### Guide d'utilisation d'une fiche signalétique, CSST

[http://www.csst.qc.ca/portail/fr/publications/DC\\_200\\_338\\_5.htm](http://www.csst.qc.ca/portail/fr/publications/DC_200_338_5.htm)

### Asthme CSST

<http://www.asthme.csst.qc.ca/>

### IRSST

<http://www.irsst.qc.ca>

### REPTOX

<http://www.reptox.csst.qc.ca/>

### ASP-Construction

[www.inrs.fr/hm/tc87.pdf](http://www.inrs.fr/hm/tc87.pdf)

### Québec Lung Association

<http://www.pq.lung.ca>

### Center for Asthma in the Workplace

<http://asthma-workplace.com/en>

## REFERENCES

**Roberge, B. et al.** *Utilisation de sensibilisants ou d'irritants dans un milieu d'enseignement de métiers de la construction*, IRSST, R-523, 2007, 63 pages.

**Verma D. K. et al.** *Current Chemical Exposure Among Ontario Construction Workers*.

*Applied Occupational Environmental Hygiene*, 2003, 18:1031-1047.

**Lara, J. and Vennes, M.** *Guide pratique de protection respiratoire*, IRSST, R-319, 2002, 56 pages.

[http://www.irsst.qc.ca/fr/\\_publicationirsst\\_862.html](http://www.irsst.qc.ca/fr/_publicationirsst_862.html)

## AUTHORS

Brigitte Roberge, IRSST

Éric Audet and Denyse Gautrin, Asthma in the Workplace Center and Respiratory Health Research Theme, Hôpital du Sacré-Cœur de Montréal

