

# How Do Your Skills Measure Up?

Self-Assessment Construction  
Trades Workbook

**Check your readiness  
for a career in construction**



BC Construction Industry Skills Improvement Council

Funded by the Government of Canada

**Canada**

This publication was designed by selecting and reformatting materials developed by SkillPlan and BuildForce Canada for the website **How do your skills Measure Up?**, available at [www.skillplan.ca](http://www.skillplan.ca).

To download a free PDF of this self-assessment workbook and score sheet, or other Essential Skills exercise books, visit [buildforce.ca](http://buildforce.ca). Copies are also available in French.

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**SkillPlan**, the BC Construction Industry Skills Improvement Council, in collaboration with BuildForce Canada produced this Essential Skills product.

SkillPlan was formed in response to the learning needs of an evolving industry. SkillPlan's mandate is to provide strategies for building a solid foundation of Essential Skills, the Velcro™ to which all other training sticks. Essential Skills are part of a person's life at work and underlie literacy in the wider community.

SkillPlan is a joint labour and management initiative of the construction industry in British Columbia. It was established as a not-for-profit society in March 1991.



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**BuildForce Canada** (originally created in 2001 as the Construction Sector Council) is a national industry-led organization committed to working with the construction industry to provide information and resources to assist with its management of workforce requirements. Its mandate is to provide accurate and timely labour market data and analysis, as well as programs and initiatives to help manage workforce requirements and build the capacity and the capability of Canada's construction and maintenance workforce.

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*The opinions and interpretations in this publication are those of the author and do not necessarily reflect those of the Government of Canada.*

## Workbook Overview

Essential Skills are skills that allow workers in every occupation to get the job done. The nine Essential Skills are Reading Text, Document Use, Numeracy, Writing, Oral Communication, Thinking, Computer Skills, Working with Others and Continuous Learning.

Construction Workers use these skills to work efficiently and safely. They read material for information about achieving certification for journeyperson status. They enter information in forms as a self-employed tradesworker. They refer to data sheets for information on solvents. They read articles on how to choose proper eye protection. Workers learn and use hand signals to direct other workers on the job site. Formulas are used to calculate load weights. Every work-related task involves a strong foundation in these Essential Skills.

This workbook will allow you to practice Reading Text, Document Use and Numeracy. When you are finished the booklet, a score sheet will help you to assess your skills and give you a good idea which areas are your strengths and weaknesses.

The questions are grouped with a document that Construction Workers might encounter in a work situation. The documents include a Red Seal information page, a questionnaire form, a data table for pipe solvents, an article on eye protection, a hand signals reference sheet and a reference chart on load weights.

Don't rush, work carefully. Imagine yourself on the job in the situation suggested by the questions. The tasks are not meant to trick you but to allow you to show what skills you have. Remember that this is an assessment of Essential Skills. All the information to answer the questions is in the document samples. Complete all the tasks to the best of your ability.

*Evaluating Readiness for Trades Careers* has been produced in a printed format anticipating the needs of educators and instructors who may want to photocopy sample documents that are useful in their own contexts. This material may be reproduced in its entirety without modification with all legal notices maintained. No part of this material may be reproduced or used for any commercial purpose or sold by any person other than the owner.

# Check Your Readiness for a Career in Construction

## How do I mark the workbook?

1. Go to the Web site, [www.skillplan.ca](http://www.skillplan.ca). Click on the ruler, *How do your skills Measure Up?*
2. Click on *Workbooks* under the heading *Choices of Activities* in the left sidebar.
3. Click on *Click here to try our Construction related Workbooks* beside the heading *Construction*.
4. Click on *Workbook Answers* beside the heading *Construction*. See the picture of the Web site page.
5. Use the answer key on pages 3 and 4 to mark your answers.
6. Mark your answers using the score sheet at the back of the Workbook. Remember to place a ✓ or an ✗ under the correct skill column.
7. Count the number of ✓ for each column and put the total number correct at the bottom of the column.
8. Remember that your goal is to score 80% or higher (8 out of 10 for each skill area).

## Why do I need 80%?

We usually think about 'passing' a test as answering 50% of the questions correctly. It also means that up to 50% of the answers could be incorrect. In the construction industry, a 50% error rate translates into financial loss, safety concerns, training difficulties and a short career in the trades. International standards set 80% as a measure of 'competency'. This means that there is a good chance that tasks at the same difficulty level will be completed correctly.





## Check Your Readiness for a Career in Construction

### What does it mean if I achieve 80%?

Remember, this is an informal assessment. That means that it has not been 'tested' extensively with hundreds of test takers. Completing only 10 tasks for each skill area will give you a general indication of your skill level. That said, 80% means that you are a competent and independent worker when faced with tasks with a similar level of difficulty as the questions represented. Technical training is fast-paced and requires solid Reading Text, Document Use and Numeracy skills.

### What does it mean if I don't achieve 80%?

It usually means you can get some of the questions correct some of the time but not consistently. If you scored below 80% in a particular skill area, you should consider improving your skills in that area. Without upgrading, you may find technical training challenging.

### How can I improve my skills?

To improve, you need to practice. Practice may mean independent study, or for some, it may require formal upgrading at an educational or training institution. Your score will indicate which is most appropriate for you. For more practice, visit [www.skillplan.ca](http://www.skillplan.ca) and click on the ruler, *How do your skills Measure Up?*

### Who should use this workbook?

If you are interested in a career in the trades and want to assess your current Essential Skills using typical construction workplace tasks, then this workbook is for you. Please note that this workbook is not intended for use as a screening tool, nor is it meant to be used as a substitute for actual training instruction. This workbook gives you an indication of your readiness for technical training.

# Check Your Readiness for a Career in Construction

## What skills does this workbook assess?

Essential Skills are skills that allow workers in every occupation to get the job done. The nine Essential Skills are:

- Reading Text,
- Document Use,
- Numeracy,
- Writing,
- Oral Communication,
- Thinking,
- Computer Skills,
- Working with Others and
- Continuous Learning.

This workbook will allow you to assess your Reading Text, Document Use and Numeracy skills. When you are finished the workbook, a score sheet will help you to assess your skills and give you a good idea which areas are your strengths and weaknesses.

## How do I use this workbook?

The questions are grouped with a document that trades people might encounter in a work situation. The documents include a Red Seal information page, a questionnaire form, a data table for pipe solvents, an article on eye protection, a hand signals reference sheet and a reference chart on load weights.



Don't rush, work carefully. Imagine yourself on the job in the situation suggested by the questions. The tasks are not meant to trick you but to allow you to show what skills you have. Remember that this is an assessment of Essential Skills. All the information to answer the questions is in the document samples. Complete all the tasks to the best of your ability.

## Where can I find materials to practice these skills?

Additional trades-related activities are available at **[www.skillplan.ca](http://www.skillplan.ca)**. Click on the ruler *How do your skills Measure Up?*

Another way to practice is to review the questions you got wrong. The Answer Book contains step by step directions for finding the answer to each question. The steps are called *One way to get this answer* because there is often more than one way to arrive at an answer. Use the steps as a model of strategies to find solutions to similar questions or tasks.



# Check Your Readiness for a Career in Construction

## Construction Workers Answer Book

### Eye Protection

Construction Workers Answer Book

Sheet Metal Workers wear personal protection equipment to protect them from hazards on the job. Look at the safety eyewear article *The Eyes Have It*.

20

Highlight, underline or circle 2 key messages to workers about safety eyewear protection in this article.

Answer

Any 2 of:

- Proper fit is critical
- Don't take it off

See the Eye Protection question 20 answer page.

### One way to get this answer

1. Scan the page and headings using the keywords *key messages to workers about safety eyewear protection*.
2. Recognize that headings can be main ideas or key messages.
3. Scan the headings and locate *Types of protection*, *Proper fit is critical* and *Don't take it off*.
4. Understand that key messages give advice or give information about what to do.
5. Decide which headings contain key messages.
6. Decide that *Types of protection* is important but is not a key message because it does not give advice or information about what to do.
7. Decide that headings such as *Proper fit is critical* and *Don't take it off* give key messages.

Note:

Other answers are possible.

Level  
CLB

Reading Text, Level 3  
7, 8 & 9 (estimated performance)

SkillPlan



# Red Seal Program

Construction trades workers research the Internet to learn about required certification. Look at the Red Seal Program sheet.

1

What is the name of the examination that apprentices must successfully complete to obtain “Red Seal” endorsement?

*Reading Text*

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---

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2

Highlight, underline, or circle the words that state that Red Seal certification allows a tradesperson to work in more than one province or territory (outside the province where they trained). Mark your answer on the document.

*Reading Text*

3

Why is this certification called “Red Seal”?

*Reading Text*

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4

Where does the apprentice go to take the Interprovincial Standards Examination?

*Reading Text*

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## RED SEAL PROGRAM

### What is the Interprovincial Standards "Red Seal" Program?

The Red Seal Program was established to provide greater mobility across Canada for skilled workers. Through the program, apprentices who have completed their training and certified journeypersons, are able to obtain a "Red Seal" endorsement on their Certificates of Qualification and Apprenticeship by successfully completing an Interprovincial Standards Examination.

The program encourages standardization of provincial and territorial apprenticeship training and certification programs. The "Red Seal" allows qualified tradespersons to practice the trade in any province or territory in Canada where the trade is designated without having to write further examinations. To date, there are **forty-five trades** included in the Red Seal Program on a national basis.

Legislation permits provinces and territories to designate trades and develop apprenticeship programs for their own requirements. Thus, in excess of 300 apprenticeship programs are available across Canada. The **Ellis Chart**, a comparative chart of apprentice training programs across Canada, is produced by HRSDC in collaboration and consultation with the provinces and territories and provides training and certification details for all of these apprenticeable programs.

### Who administers the Interprovincial Standards "Red Seal" Program and how does it work?

The program is administered in each province and territory under the guidance of the Canadian Council of Directors of Apprenticeship (CCDA). Each province and territory has an appointed Director of Apprenticeship for this purpose.

**A national occupational analysis**, developed for each Red Seal trade, is used as a base document for the development of interprovincial standard examinations and is encouraged to be used by the provinces and territories for curriculum development.

Continuing efforts are underway both to expand the program and to streamline the existing process for the development and revision of national occupational analyses and examinations.

### How to obtain a Red Seal?

In certain trades, holders of provincial and territorial Certificates of Qualification can apply to write an Interprovincial Examination; if successful, they receive a distinctive "Red Seal" which is affixed to their Certificate of Qualification.

An Interprovincial Standards Red Seal can be obtained in the trades designated as Red Seal by:

1. a) either graduating from a recognized provincial or territorial apprenticeship training program; or  
b) obtaining a Journeyperson level certificate from a province or territory;
2. passing the Interprovincial Standards Examination for that trade.

The Interprovincial Standards "Red Seal" Examinations are administered through the provincial and territorial certification and apprenticeship offices.

Source: Reproduced with the permission of the Minister of Public Works and Government Services and Courtesy of Human Resources and Social Development Canada, 2006.

# Independent Operator Questionnaire

Employers may require framers to complete forms to show that they have insurance.

Look at Independent Operator Questionnaire.

5

A framer works  $7\frac{1}{2}$  hours per day, 3 days per week. Enter the number of hours worked per week on the form.

*Numeracy*

6

A framer owns and uses their own power saws, hand tools, compressor, table saw, and air tools. Enter this information on the form.

*Document Use*

7

The framer works on his own, without hiring any help. Enter this information on the form.

*Document Use*

8

Complete the information for questions 7 and 8 on the form. Enter either the information the framer needs to provide, or enter "n/a" if no information is needed.

*Document Use*

9

Highlight items the framer might have to provide with the completed form. Mark your answer on the document.

*Document Use*



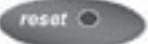
10

The Workplace Safety and Insurance Board decides that the framer is an Independent Operator. What might the framer have to do to be hired by a contractor?

*Document Use*



# Independent Operator Questionnaire

	<b>Mail to:</b> 200 Front Street West, Toronto ON M5V 3J1	<b>OR Fax to:</b> 416 344-3200	<b>Construction Industry Questionnaire Attachment</b>																							
<b>Please print in black ink</b>																										
<p>Thank you for contacting the Workplace Safety &amp; Insurance Board (WSIB). In order for us to make a determination regarding your status under the Workplace Safety and Insurance Act, the following form must be completed in full and supporting documentation attached.</p> <p>Please read and complete this form and the attached Construction Industry Questionnaire. Attach the requested documents and return to the WSIB by fax, mail or in person.</p>																										
<div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;"> <b>start Information</b> </div> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; padding: 5px;"> <b>1.</b> How many hours per week do you work for your current contractor?                         </td> <td style="width: 50%; padding: 5px;"> <b>2.</b> On what basis is your salary calculated (hourly, weekly, piecework, etc.)?                         </td> </tr> <tr> <td colspan="2" style="padding: 5px;"> <b>3.</b> What equipment is necessary to complete your work?                         </td> </tr> <tr> <td style="width: 50%; padding: 5px;"> <b>4.</b> Who provides the equipment?                         </td> <td style="width: 50%; padding: 5px;"> <b>5.</b> Who pays for the equipment?                         </td> </tr> <tr> <td colspan="2" style="padding: 5px;"> <b>6.</b> Do/did you hire (please check either yes or no)                             <table style="width: 100%; margin-top: 5px;"> <tr> <td style="width: 50%;">Part-time help?</td> <td><input type="checkbox"/> Yes <input type="checkbox"/> No</td> <td style="width: 50%;">Full-time help?</td> <td><input type="checkbox"/> Yes <input type="checkbox"/> No</td> </tr> <tr> <td>Subcontractors?</td> <td><input type="checkbox"/> Yes <input type="checkbox"/> No</td> <td>Family members?</td> <td><input type="checkbox"/> Yes <input type="checkbox"/> No</td> </tr> <tr> <td></td> <td></td> <td>Casual help?</td> <td><input type="checkbox"/> Yes <input type="checkbox"/> No</td> </tr> </table> </td> </tr> <tr> <td style="width: 33%; padding: 5px;">                     If you answered yes to any box in question 6, please advise:                 </td> <td style="width: 33%; padding: 5px;"> <b>7.</b> How many helpers do you hire?                 </td> <td style="width: 33%; padding: 5px;"> <b>8.</b> Date hired (dd/mm/yyyy)                 </td> </tr> </table>				<b>1.</b> How many hours per week do you work for your current contractor?	<b>2.</b> On what basis is your salary calculated (hourly, weekly, piecework, etc.)?	<b>3.</b> What equipment is necessary to complete your work?		<b>4.</b> Who provides the equipment?	<b>5.</b> Who pays for the equipment?	<b>6.</b> Do/did you hire (please check either yes or no) <table style="width: 100%; margin-top: 5px;"> <tr> <td style="width: 50%;">Part-time help?</td> <td><input type="checkbox"/> Yes <input type="checkbox"/> No</td> <td style="width: 50%;">Full-time help?</td> <td><input type="checkbox"/> Yes <input type="checkbox"/> No</td> </tr> <tr> <td>Subcontractors?</td> <td><input type="checkbox"/> Yes <input type="checkbox"/> No</td> <td>Family members?</td> <td><input type="checkbox"/> Yes <input type="checkbox"/> No</td> </tr> <tr> <td></td> <td></td> <td>Casual help?</td> <td><input type="checkbox"/> Yes <input type="checkbox"/> No</td> </tr> </table>		Part-time help?	<input type="checkbox"/> Yes <input type="checkbox"/> No	Full-time help?	<input type="checkbox"/> Yes <input type="checkbox"/> No	Subcontractors?	<input type="checkbox"/> Yes <input type="checkbox"/> No	Family members?	<input type="checkbox"/> Yes <input type="checkbox"/> No			Casual help?	<input type="checkbox"/> Yes <input type="checkbox"/> No	If you answered yes to any box in question 6, please advise:	<b>7.</b> How many helpers do you hire?	<b>8.</b> Date hired (dd/mm/yyyy)
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<p>Upon signing the Construction Industry Questionnaire, you agree to provide the WSIB the right to verify your responses.</p> <p><b>Please include copies of:</b></p> <ul style="list-style-type: none"> <li>Canada Revenue Agency, CRA (formerly Canada Customs &amp; Revenue Agency) Employer Number (if applicable), and Business Registration/Articles of Incorporation from the Ministry of Consumer and Business Services (MCBS).</li> <li>Brochures/pamphlets/yellow page ad used to advertise your business, if applicable.</li> <li>Proof that you file GST.</li> <li>All invoices and contracts for work completed for your current contractor within the last six (6) months. If not available, please explain:</li> </ul>																										
<ul style="list-style-type: none"> <li>Five (5) to seven (7) invoices or contracts for work completed for other contractors within the last six (6) months. If not available, please explain:</li> </ul>																										
<ul style="list-style-type: none"> <li>Purchase orders/receipts for materials supplied within the last three (3) to six (6) months. If not available, please explain:</li> </ul>																										
<ul style="list-style-type: none"> <li>Last filed tax return with CCRA - T1 General with Statement of Business Activities (T2124).</li> </ul>																										
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<div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;"> <b>Additional Information</b> </div> <div style="border: 1px solid black; height: 40px; margin-bottom: 5px;"></div>																										
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2023A (02/06)		<b>Please return with the completed Construction Industry Questionnaire.</b>																								
		<a href="http://www.wsib.on.ca">www.wsib.on.ca</a>																								

## Pipe Data—Solvent Cementing

Steamfitters and pipefitters refer to handbooks when assembling fittings and pipes. Look at Pipe Data—Solvent Cementing.

11

Why is it necessary to remove all burrs and ridges from the pipe end?

*Reading Text*

---

---

12

What is the initial set time needed for a 90 mm pipe if the temperature is 10°C?

*Numeracy*

---

13

Solvent cement is used to join a 250 mm pipe and fitting. If the temperature is 20°C and the weather is very humid, how many hours are needed to allow for cure time?

*Numeracy*

---

14

A pipefitter has just cemented the joint of an 80 mm pipe. The temperature is 10°C and it is raining. Cementing is finished at 1:00 pm. What is the earliest time of the day that the pipefitter can test the pipe by applying line pressure?

*Numeracy*

---

15

A pipefitter cements a 500 millimetre pipe on a hot, humid day (28° C). How many days must pass before the cement completely cures?

*Numeracy*

---





PIPE DATA	Selection/Solvent Cementing	75
<b>Selection &amp; Usage</b> <b>Reinforced Thermosetting Resin Pipes (RTRP).</b> <i>RTRP pipe and fittings are supplied in various colors depending on the manufacturer. It is used in all types of industrial and commercial applications.</i> The methods used to join RTR piping include: butt, bell and spigot adhesive bonding, flanged and threaded connections. It is supplied in rigid lengths and has maximum operating temperatures of: <ul style="list-style-type: none"> <li>• Glass Reinforced Epoxy 300 degrees F (149 degrees C).</li> <li>• Glass Reinforced Polyester 225 degrees F (107 degrees C).</li> <li>• Glass Reinforced Vinylestes 250 degrees F (121 degrees C).</li> <li>• Glass Reinforced Furan 300 degrees F (149 degrees C).</li> </ul>		
<b>Solvent Cementing</b> <i>Solvent cementing is the most common method used to join thermoplastic (ABS, PVC, and CPVC) pipe and fittings. The following give a brief description of the steps involved in the assembling of a solvent cement joint:</i> <ol style="list-style-type: none"> <li>1. Cut the pipe squarely with a miter box and hand saw or with a plastic pipe cutter.</li> <li>2. Remove all burrs and ridges from the pipe end. <i>Ridges or raised beads on the pipe will have a tendency to wipe away the cement when fitting the joint together.</i></li> <li>3. Wipe the end of the pipe and socket of the fitting to remove any dirt, moisture or grease.</li> <li>4. Select the appropriate applicator for the size of pipe used. See table #13.</li> <li>5. The joining surfaces must be softened by the use of primer, cement or a combination of both primer and cement.</li> </ol> <i>Note: Primer is not required on ABS.</i>		

Note: Primer is not required on ABS

PIPE DATA

Solvent Cementing

76

**Solvent Cementing**

6. Apply sufficient cement to pipe and fitting to fill the gap space in the joint. See illustration #14.
7. Assemble the pipe and fitting while the cement is still wet and fluid. Twist the pipe slightly while assembling, and when bottomed, hold for approximately 30 seconds to prevent push out from the tapered fitting.

8. Wipe off any excess cement from the assembled joint. Handle the joint with care during set time. Table #14 gives initial set times for various pipe sizes and temperatures.

APPROPRIATE APPLICATOR BRUSH SIZE

Nominal Pipe Size		Maximum Width		Minimum Length	
Inches	Millimetres	Inches	Millimetres	Inches	Millimetres
1 to 1¼	25 to 32	1	25	1½	40
1½ to 2	40 to 50	1½	40	2	50
3	80	2½	65	3	80
4	100	3	80	3½	90
6	150	5	125	5½	140
8	200	6	150	6	150

Table #13 - Applicator Brush Sizes

77

**Solvent Cementing**

Figure #12 - Applicator Brush Sizes

77

# PIPE DATA

## Solvent Cementing

### Set and Cure Times

#### INITIAL SET AND CURE ITEMS

##### Initial Set Time

Temperature Range	1/2" to 1 1/4" (15 mm to 32 mm)	1 1/2" to 3" (40 mm to 80 mm)	3 1/2" to 8" (90 mm to 200 mm)	10" to 14" (250 mm to 350 mm)	16" to 24" (400 mm to 600 mm)
60° - 100°F 15° - 40°C	15 MIN.	30 MIN.	1 HRL.	2 HRL.	4 HRL.
40° - 60°F 5° - 15°C	1 HRL.	2 HRL.	4 HRL.	8 HRL.	16 HRL.
0° - 40°F -20° - +5°C	3 HRL.	6 HRL.	12 HRL.	24 HRL.	48 HRL.

##### Cure Times

Temperature Range	1 to 6 HRL.	2 to 12 HRL.	6 to 24 HRL.	24 HRL.	48 to 72 HRL.
60° - 100°F 15° - 40°C	1 to 6 HRL.	2 to 12 HRL.	6 to 24 HRL.	24 HRL.	48 to 72 HRL.
40° - 60°F 5° - 15°C	2 to 12 HRL.	4 to 24 HRL.	12 to 48 HRL.	72 HRL.	120 HRL.
0° - 40°F -20° - +5°C	8 to 48 HRL.	16 to 96 HRL.	48 to 192 HRL.	192 HRL.	240 to 336 HRL.

Note:

1. Initial set time indicates joints will withstand normal installation and handling stresses.
2. Cure times indicates required time before testing or before line pressure can be applied.
3. 50% more cure time is required in damp or humid conditions.

Table #14 - Set and Cure Times

IPT Publishing and Tra

## Eye Protection

Sheet Metal Workers wear personal protection equipment to protect them from hazards on the job. Look at the safety eyewear article *The eyes have it*.

16

The worker needs to learn about eye protection. Highlight, underline or circle the words in the subtitle that explain what this article is about. Mark your answer on the document.

Reading Text

17

Flying particles are one example of a workplace hazard. Name 4 other hazards or job conditions that require safety eyewear protection.

Reading Text

---

---

---

18

What are 3 types of safety eyewear protection?

Reading Text

---

---

---

19

What are 2 actions workers can do to get maximum benefit from safety eyewear?

Reading Text

---

---

20

Highlight, underline or circle 2 key messages to workers about safety eyewear protection in this article.

Reading Text

---

---



# The eyes have it

Eye protection can save your vision – even your life. Here's what you need to know.

*See next page for full article.*



# The eyes have it

**Eye protection can save your vision – even your life. Here's what you need to know.**

*By Gina Lego*

Safety eyewear is an essential piece of personal protective equipment, but all too often workers wear the wrong kind or, even worse, don't wear it at all. The statistics are startling. In the five-year period ending 2004, WorkSafeBC accepted more than 9,200 short-term and long-term disability claims (excluding health care and rehabilitation costs) related to workplace eye injuries, at a cost of more than \$28 million.

### Types of protection

Conducting a worksite assessment is the first step in determining the correct fit between eye protection needs and job conditions.

Whether a worker is exposed to flying particles from drilling or scaling, UVA/UVB rays, welding light and electrical arcs, or even bloodborne pathogens, each worksite is unique and will require careful selection of proper eye protectors.

Safety glasses provide minimum protection and are for general working conditions where dust, chips, or flying particles may present a hazard. They are available in a variety of styles and provide side protection in the form of shields or wraparound arms. Lenses should have an

anti-fog treatment. Goggles provide higher impact, dust, and acid or chemical splash protection than safety glasses. Molded goggles, like those used for skiing, are suitable when workers are continually exposed to splash or fine dust, and should have indirect venting. For less fogging when working with large particles, direct-vent goggles are recommended.

Face shields protect the full face from injury and they offer the highest impact protection and shelter from spraying, chipping, grinding, chemicals, and bloodborne hazards. A face shield is considered a secondary safeguard to protective eyewear; it should never be worn without safety glasses or goggles.

### Proper fit is critical

In order to get the maximum benefit from safety eyewear, individuals should be test fitted and assigned a personal set of protective eyewear, then instructed on its care and maintenance. As with any personal item, safety eyewear is more likely to be used if it offers the right look and fit for the individual.

"One of the key factors in getting workers to wear safety eyewear is to offer a choice of styles that suits their individual needs," says Kevin Birnie, WorkSafeBC (WCB)





occupational safety officer. “People have a real preference for the type of eye protection they wear.”

Darren Giesbrecht, shop foreman at the Oakmont Industries Division of Guardian Building Products in Surrey, agrees. “Our workers are offered a choice of about six different styles.

If we don’t supply a style they like, we’ll reimburse them for one of their own choosing.”

### Don’t take it off

Choosing the right safety eyewear is important, but remember it can’t protect you if you’re not wearing it. “Accidents happen when and where you least expect,” says Ken Kirby, a WorkSafeBC engineer. “We often see eye injuries occurring outside of a worker’s usual workspace — not where the obvious hazards exist. For example, a worker will take off his protective eyewear to do a job in another area, and that’s when the accident occurs.”

That’s why Kirby feels workers can never be too careful.

“Employers are encouraged to consider a general policy where workers are required to wear their protective eyewear at all times while on a worksite.”

### Eye safety resources

For more information, contact your WorkSafeBC officer, call the WorkSafe Call Centre at 604 276-3100, toll-free at 1 888 621-7233, or visit the following web sites:

- Occupational Health and Safety Regulation, Part 8: Eye and face protection <http://regulation.healthandsafetycentre.org/s/Part8.asp#SectionNumber:8.14>
- Canadian Centre for Occupational Health and Safety, Safety Glasses and Face Protectors [www.ccohs.ca/oshanswers/prevention/ppe/glasses.html](http://www.ccohs.ca/oshanswers/prevention/ppe/glasses.html)



# Hand Signals Reference Sheet

Crane Operators use cranes to lift and move equipment and materials on a construction site. They need to understand hand signals to move items safely. Look at the Hand Signals Reference Sheet.

21

Which track is locked when the Travel (One Track) signal is used?

*Document Use*

---

---

22

Which 2 hand signals are for crawler cranes only?

*Document Use*

---

---

23

Which hand signal can be combined with any motion signal?

*Document Use*

---

---

2-4

Which 2 hand signals can be done with either one or both hands?

*Document Use*

---

---

25

Circle the 3 signals used to direct a crawler crane to retract its boom and move forward about 5 metres on both tracks. Place 1, 2, or 3 inside each circle to show the order each signal is used. Mark your answer on the document.

*Document Use*



# Hand Signals Reference Sheet

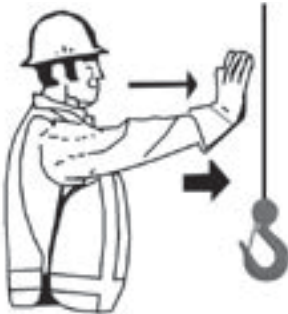
Standard hand signals for controlling crane operations - crawler, locomotive and truck cranes.



**MOVE SLOWLY.** Use one hand to give any motion signal and place other hand motionless in front of hand giving the motion signal. (Hoist slowly shown as example).



**STOP.** Both arms outstretched at the sides horizontally, fingers outstretched.



**TRAVEL.** Arm extended forward, hand open and slightly raised, make pushing motion in direction of travel.



**DOG EVERYTHING.** Clasp hands in front of body.



**TRAVEL. (Both Tracks).** Use both fists in front of body, making a circular motion about each other, indicating direction of travel; forward or backward. (For crawler cranes only.)



**TRAVEL. (One Track).** Lock the track on side indicated by raised fist. Travel opposite track in direction indicated by circular motion of other fist, rotated vertically in front of body. (For crawler cranes only.)



**EXTEND BOOM. (Telescoping Booms).** Both fists in front of body with thumbs pointing outward. One hand signal may be used.



**RETRACT BOOM. (Telescoping Booms).** Both fists in front of body with thumbs pointing toward each other. One hand signal may be used.

## Load Weights

Boilermakers repair boilers, vessels, tanks, heat exchangers and other heavy-metal structures. A critical part of the work is preparing heavy loads for rigging. Look at the Load Weights - Calculating page.

26

Calculate the load weight of 200 cubic feet of steel.

*Numeracy*

---

---

27

What is the area of the aluminum disk? The area of a circle is approx. 80% of its diameter squared (diameter  $\times$  diameter)

*Numeracy*

---

---

28

How many pounds per square foot does the 3" thick aluminum disk weigh?

*Numeracy*

Pounds / Square Feet	
Aluminum plate	
1/4"	3.50

---

---

29

What is the total load weight of the aluminum disk?

load weight of the disk = area of the disk  $\times$  weight of the disk in pounds/square foot

*Numeracy*

---

---

30

What is the outside circumference of the pipe?

•  $\pi = 3.2$  (approx.) • Circumference =  $\pi d$

*Numeracy*

---

---





## Load Weights – Calculating

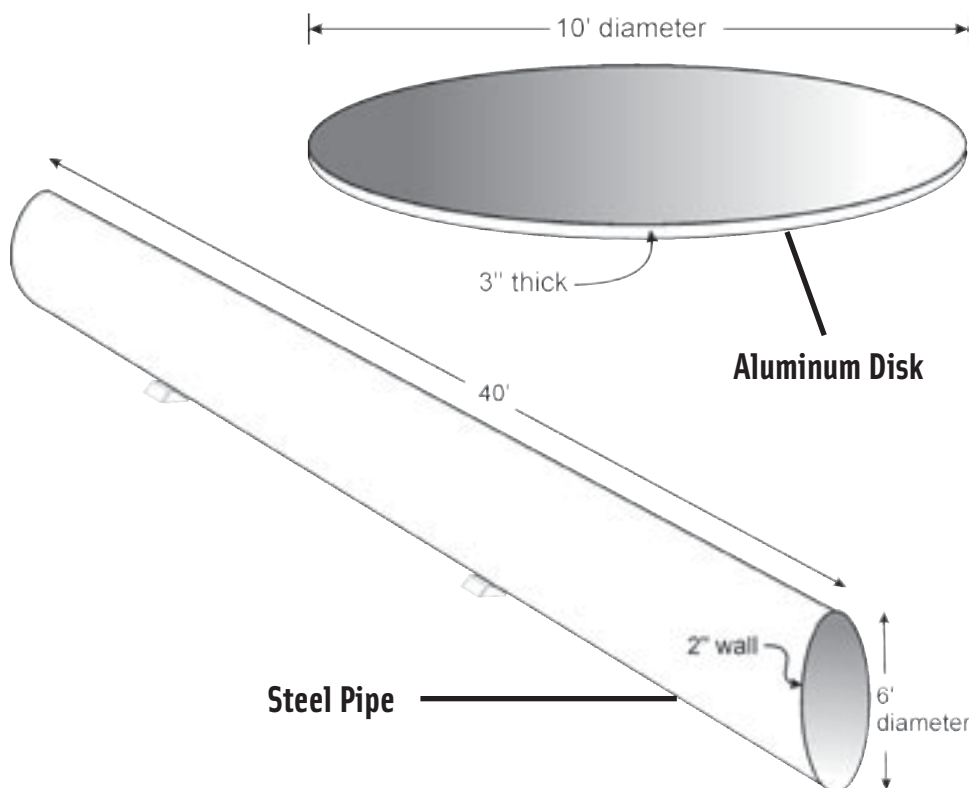
Materials and Liquids – Pounds/Cubic Feet			
Aluminum	165	Iron Casting	450
Asbestos	153	Lead	708
Asphalt	81	Lumber- Fir	32
Brass	524	Lumber- Oak	62
Brick	120	Lumber- RR Ties	50
Bronze	534	Oil Motor	58
Coal	56	Paper	58
Concrete, Reinf.	150	Portland Cement	94
Crushed Rock	95	River Sand	120
Diesel	52	Rubber	94
Dry Earth, Loose	75	Steel	480
Gasoline	45	Water	63
Glass	162	Zinc	437

Pounds / Square Feet	
Steel plate	
• 1/8"	5
• 1/4"	10
• 1/2"	20
• 1"	40
Aluminum plate	
• 1/8"	1.75
• 1/4"	3.50
Lumber	
• 3/4" Fir	2
• 3/4" Oak	4

Pounds / Gal.	
Gas	6.0
Diesel	7.0
Water	8.3
• 7.5 gallons of liquid to a cubic foot	
• 27 cubic feet to a cubic yard	
• 2,000 lbs. = 1 U.S. ton	

### Formulas and Information

- H = Height
- W = Width
- L = Length
- d = diameter
- r = 1/2 diameter
- $\pi = 3.2$  (approx.)
- Area of square or rectangle = LW
- Volume of cube = HWL
- Area of circle =  $\pi r^2$
- Circumference =  $\pi d$
- The area of a circle is approx. 80% of its diameter squared (diameter  $\times$  diameter)
- Load Weight (to estimate) = Volume in cu. ft.  $\times$  500 lbs.  $\times$  density factor 0.02, 0.05, 0.10, 0.20, 0.30, etc.



# Construction Workers Workbook – Score Sheet

Record your scores from the Answer Key found at [www.skillplan.ca](http://www.skillplan.ca). Mark your scores with a check mark (use the symbol ✓ or an X).

Question Number	Score		
	Reading Text	Document Use	Numeracy
<b>Red Seal Program</b>			
1	<input type="checkbox"/>		
2	<input type="checkbox"/>		
3	<input type="checkbox"/>		
4	<input type="checkbox"/>		
<b>Independent Operator Questionnaire</b>			
5			<input type="checkbox"/>
6		<input type="checkbox"/>	
7		<input type="checkbox"/>	
8		<input type="checkbox"/>	
9		<input type="checkbox"/>	
10		<input type="checkbox"/>	
<b>Pipe Data – Solvent Cementing</b>			
11	<input type="checkbox"/>		
12			<input type="checkbox"/>
13			<input type="checkbox"/>
14			<input type="checkbox"/>
15			<input type="checkbox"/>
<b>Eye Protection</b>			
16	<input type="checkbox"/>		
17	<input type="checkbox"/>		
18	<input type="checkbox"/>		
19	<input type="checkbox"/>		
20	<input type="checkbox"/>		
<b>Hand Signals Reference Sheet</b>			
21		<input type="checkbox"/>	
22		<input type="checkbox"/>	
23		<input type="checkbox"/>	
24		<input type="checkbox"/>	
25		<input type="checkbox"/>	
<b>Load Weights</b>			
26			<input type="checkbox"/>
27			<input type="checkbox"/>
28			<input type="checkbox"/>
29			<input type="checkbox"/>
30			<input type="checkbox"/>
<b>Your score</b>			
<b>Total Possible</b>	<b>10</b>	<b>10</b>	<b>10</b>

Question Number	Score		
	Reading Text	Document Use	Numeracy
<b>Red Seal Program</b>			
1	<input type="checkbox"/>		
2	<input type="checkbox"/>		
3	<input type="checkbox"/>		
4	<input type="checkbox"/>		
<b>Independent Operator Questionnaire</b>			
5			<input type="checkbox"/>
6		<input type="checkbox"/>	
7		<input type="checkbox"/>	
8		<input type="checkbox"/>	
9		<input type="checkbox"/>	
10		<input type="checkbox"/>	
<b>Pipe Data – Solvent Cementing</b>			
11	<input type="checkbox"/>		
12			<input type="checkbox"/>
13			<input type="checkbox"/>
14			<input type="checkbox"/>
15			<input type="checkbox"/>
<b>Eye Protection</b>			
16	<input type="checkbox"/>		
17	<input type="checkbox"/>		
18	<input type="checkbox"/>		
19	<input type="checkbox"/>		
20	<input type="checkbox"/>		
<b>Hand Signals Reference Sheet</b>			
21		<input type="checkbox"/>	
22		<input type="checkbox"/>	
23		<input type="checkbox"/>	
24		<input type="checkbox"/>	
25		<input type="checkbox"/>	
<b>Load Weights</b>			
26			<input type="checkbox"/>
27			<input type="checkbox"/>
28			<input type="checkbox"/>
29			<input type="checkbox"/>
30			<input type="checkbox"/>
<b>Your score</b>			
<b>Total Possible</b>	<b>10</b>	<b>10</b>	<b>10</b>

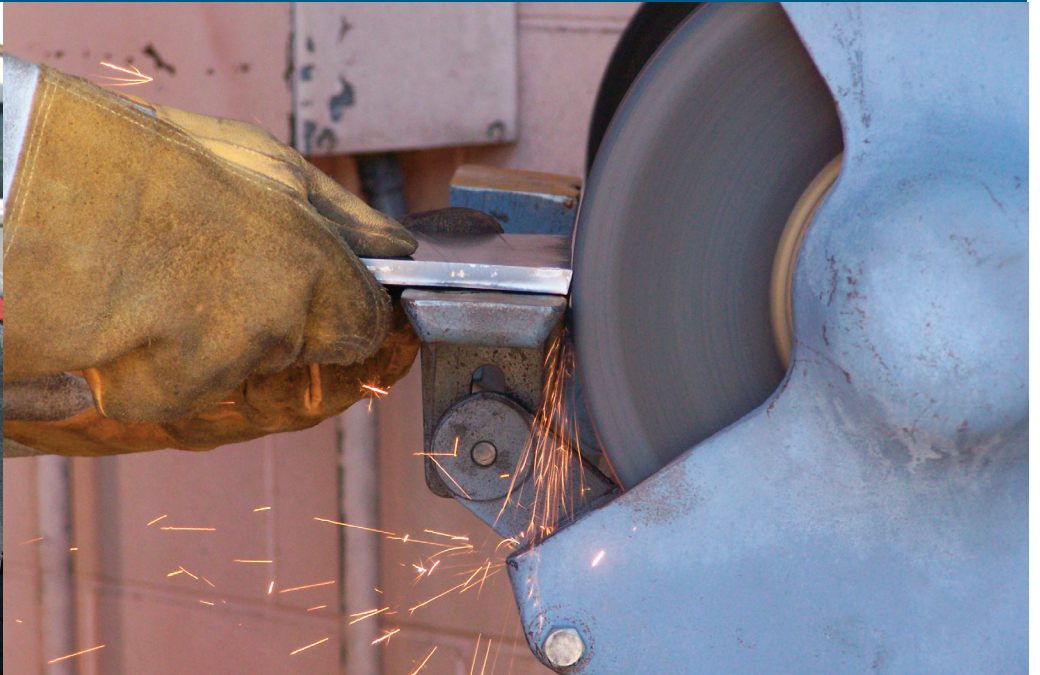
Your goal is to score 8 out of 10 (80%) or higher in each skill area.







# **Construction Workers Answer Book**



SkillPlan, the BC Construction Industry Skills Improvement Council, in collaboration with the Construction Sector Council (CSC) have produced this Essential Skills product. We gratefully acknowledge financial assistance contributed by Workplace Partnerships, Human Resources and Social Development.

The Construction Sector Council is a national organization committed to the development of a highly skilled workforce – one that will support the future needs of the construction industry in Canada. Created in April 2001, and financed by both government and industry, the CSC is a partnership between labour and business. For more information, visit CSC's website at [www.csc-ca.org](http://www.csc-ca.org).

This publication was designed by selecting and reformatting materials developed by SkillPlan and project partners for the website *How do your skills Measure Up?* at [www.skillplan.ca](http://www.skillplan.ca).

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*SkillPlan*

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Suite 405 – 3701 Hastings Street,  
Burnaby, BC  
V5C 2H6

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SkillPlan was formed in response to the learning needs of an evolving industry. SkillPlan's mandate is to provide strategies for building a solid foundation of Essential Skills, the Velcro™ to which all other training sticks. Essential Skills are part of a person's life at work and underlie literacy in the wider community.

SkillPlan is a joint labour and management initiative of the construction industry in British Columbia. It was established as a not-for-profit society in March 1991. For more information, visit SkillPlan's website: [www.skillplan.ca](http://www.skillplan.ca).





## Answer Book Overview

The Construction Workers Workbook tests 3 Essential Skills: Reading Text, Document Use and Numeracy. Each of the 3 Essential Skills has 10 questions for a total of 30 questions.

Mark your answers using the Answer Key page and the Score Sheet. Total the number of questions you got correct at the bottom of each column.

Your goal is to score at least 8 out of 10 for each of the Essential Skills. If you score below 8 for any of the 3 Essential Skills, you may need more practice or require upgrading in that skill.

This answer book provides the correct answers to the questions as well as a suggested strategy to find each answer. The strategies are titled *One way to get this answer*. As the title suggests, the strategies presented are only one of many ways to arrive at the correct answer. They model the type of thinking that can be learned and applied to other situations.

For further practice with Reading Text, Document Use and Numeracy skills, and strategies to arrive at solutions, visit the *How do your skills Measure Up?* website at [www.skillplan.ca](http://www.skillplan.ca).







## Construction Workers Workbook — Answer Key

#	Answer
<b>Red Seal Program</b>	
1	Interprovincial Standards Examination
2	See Red Seal Program Question #2 answer, page 7
3	a distinctive “Red Seal” is affixed to the Certificate of Qualification
4	the provincial and territorial certification and apprenticeship offices
<b>Independent Operator Questionnaire</b>	
5	22½ or 22.5 See the Independent Operator Questionnaire Question #5 answer, page 12
6	See the Independent Operator Questionnaire Question #6 answer, page 14
7	See the Independent Operator Questionnaire Question #7, 8 answer, page 18
8	See the Independent Operator Questionnaire Question #7, 8 answer, page 18
9	See the Independent Operator Questionnaire Question #9 answer, page 21
10	request coverage through the WSIB’s Optional Insurance Policy
<b>Pipe Data – Solvent Cementing</b>	
11	They will wipe away the cement when fitting the joint together
12	4 hours
13	36 hours
14	7:00 p.m.
15	4 ½ days or 4.5 days
<b>Eye Protection</b>	
16	eye protection See the Eye Protection Question #16 answer, page 33
17	Any 4 of: UVA/UVB rays, welding light and electrical arcs, bloodborne pathogens, dust, chips, flying particles Also acceptable: acid or chemical splash, splash, fine dust
18	safety glasses, goggles, and face shields
19	<ul style="list-style-type: none"> <li>• be test fitted and assigned a personal set of protective eyewear</li> <li>• instructed on its care and maintenance</li> </ul>
20	Any 2 of: <ul style="list-style-type: none"> <li>• Proper fit is critical</li> <li>• Don’t take it off</li> </ul> See the Eye Protection Question #20 answer, page 38

#	Answer
<b>Hand Signals Reference Sheet</b>	
21	the track on side indicated by raised fist
22	<ul style="list-style-type: none"> <li>• Travel (Both Tracks)</li> <li>• Travel (One Track)</li> </ul>
23	Move Slowly
24	<ul style="list-style-type: none"> <li>• Extend Boom</li> <li>• Retract Boom</li> </ul>
25	See the Hand Signals Reference Sheet Question #25 answer, page 46
<b>Load Weights</b>	
26	96,000 pounds
27	80 square feet
28	42 pounds per square foot
29	3,360 pounds
30	19.2'



## Red Seal Program

Construction trades workers research the Internet to learn about required certification. Look at the Red Seal Program sheet.

**1**

What is the name of the examination that apprentices must successfully complete to obtain “Red Seal” endorsement?

**Answer**     **Interprovincial Standards Examination**

### One way to get this answer

1. Scan the page using the keywords *examination* and “*Red Seal*” *endorsement*.
2. Locate “*Red Seal*” *endorsement* and *completing an Interprovincial Standards Examination* in the first paragraph.
3. Decide that the name of the examination is the Interprovincial Standards Examination.

**Level**  
**CLB**

Reading Text, Level 1  
3, 4 & 5 (estimated performance)

## Red Seal Program

Construction trades workers research the Internet to learn about required certification. Look at the Red Seal Program sheet.

**2**

Highlight, underline, or circle the words that state that Red Seal certification allows a tradesperson to work in more than one province or territory (outside the province where they trained).

**Answer**    **The “Red Seal” allows qualified tradespersons to practice the trade in any province or territory in Canada.**

See the Red Seal Program question 2 answer page.

### One way to get this answer

1. Scan the page using the keywords *in more than one province or territory*.
2. Locate *The “Red Seal” allows qualified tradespersons to practice the trade in any province or territory in Canada* in the second paragraph.
3. Decide that practice means the same as work.
4. Decide that the Red Seal allows qualified tradespersons to work in more than one province or territory.

**Level**        Reading Text, Level 2  
**CLB**         5, 6 & 7 (estimated performance)



## RED SEAL PROGRAM

### What is the Interprovincial Standards “Red Seal” Program?

The Red Seal Program was established to provide greater mobility across Canada for skilled workers. Through the program, apprentices who have completed their training and certified journeypersons, are able to obtain a “Red Seal” endorsement on their Certificates of Qualification and Apprenticeship by successfully completing an Interprovincial Standards Examination.

The program encourages standardization of provincial and territorial apprenticeship training and certification programs. The “Red Seal” allows qualified tradespersons to practice the trade in any province or territory in Canada where the trade is designated without having to write further examinations. To date, there are **forty-five trades** included in the Red Seal Program on a national basis.

Legislation permits provinces and territories to designate trades and develop apprenticeship programs for their own requirements. Thus, in excess of 300 apprenticeship programs are available across Canada. The **Ellis Chart**, a comparative chart of apprentice training programs across Canada, is produced by HRSDC in collaboration and consultation with the provinces and territories and provides training and certification details for all of these apprenticeable programs.

### Who administers the Interprovincial Standards “Red Seal” Program and how does it work?

The program is administered in each province and territory under the guidance of the Canadian Council of Directors of Apprenticeship (CCDA). Each province and territory has an appointed Director of Apprenticeship for this purpose.

A **national occupational analysis**, developed for each Red Seal trade, is used as a base document for the development of interprovincial standard examinations and is encouraged to be used by the provinces and territories for curriculum development.

Continuing efforts are underway both to expand the program and to streamline the existing process for the development and revision of national occupational analyses and examinations.

### How to obtain a Red Seal?

In certain trades, holders of provincial and territorial Certificates of Qualification can apply to write an Interprovincial Examination; if successful, they receive a distinctive “Red Seal” which is affixed to their Certificate of Qualification.

An Interprovincial Standards Red Seal can be obtained in the trades designated as Red Seal by:

1. a) either graduating from a recognized provincial or territorial apprenticeship training program; or  
b) obtaining a Journeyperson level certificate from a province or territory;
2. passing the Interprovincial Standards Examination for that trade.

The Interprovincial Standards “Red Seal” Examinations are administered through the provincial and territorial certification and apprenticeship offices.

Source: Reproduced with the permission of the Minister of Public Works and Government Services and Courtesy of Human Resources and Social Development Canada, 2006.

## Red Seal Program

Construction trades workers research the Internet to learn about required certification. Look at the Red Seal Program sheet.

**3**

Why is this certification called “Red Seal”?

**Answer**    a distinctive “Red Seal” is affixed to the Certificate of Qualification

### One way to get this answer

1. Scan the sheet using the keyword *Red Seal*.
2. Locate the lines *they receive a distinctive “Red Seal” which is affixed to their Certificate of Qualification*.
3. Decide that this is how the program gets its name.

**Level**  
**CLB**

Reading Text, Level 2  
5, 6 & 7 (estimated performance)

## Red Seal Program

Construction trades workers research the Internet to learn about required certification. Look at the Red Seal Program sheet.

**4**

Where does the apprentice go to take the Interprovincial Standards Examination?

**Answer**    **the provincial and territorial certification and apprenticeship offices**

### One way to get this answer

1. Scan the page using the keywords *Interprovincial Standards Examination*.
2. Locate the heading *How to obtain a Red Seal*.
3. Determine that obtaining a Red Seal includes taking and passing an examination.
4. Locate *Interprovincial Standards “Red Seal” Examinations are administered through the provincial and territorial certification and apprenticeship offices*.
5. Decide that *administered* means examinations are managed or overseen there, and that an examination could be taken where it is administered.
6. Decide that the apprentice takes the Examination at the provincial and territorial certification and apprenticeship offices.

**Level**    Reading Text, Level 2  
**CLB**      5, 6 & 7 (estimated performance)

## Independent Operator Questionnaire

Employers may require framers to complete forms to show that they have insurance. Look at Independent Operator Questionnaire.

**5**

A framer works  $7\frac{1}{2}$  hours per day, 3 days per week. Enter the number of hours worked per week on the form.

**Answer**     **$22\frac{1}{2}$  or 22.5**

See the Independent Operator Questionnaire Question 5 answer page.

### One way to get this answer

1. Identify what is required: the number of hours worked per week.
2. Scan the page using the keywords *hours* and *week*.
3. Locate 1. *How many hours per week do you work for your current contractor?*
4. Set up the problem to calculate the number of whole hours worked per week:  
number of whole hours worked per day  $\times$  number of days worked per week = total number of whole hours worked per week
5. Calculate:  $7 \times 3 = 21$
6. Set up the problem to calculate the number of part hours worked per week:  
number of part hours worked per day  $\times$  number of days worked per week = total number of part hours worked per week
7. Convert the fraction to a decimal:  $\frac{1}{2}$  to .5
8. Calculate:  $.5 \times 3 = 1.5$



9. Set up the problem to calculate total number of hours worked per week:  
number of whole hours worked per week + number of part hours worked per week = total number of hours worked per week
10. Calculate:  $21 + 1.5 = 22.5$
11. Decide that the framer works a total of 22.5 hours per week.
12. Enter 22.5 next to *1. How many hours per week do you work for your current contractor?*

**Note**

You may have noticed that there are fractions in the question and you may have converted .5 to  $\frac{1}{2}$  and decided the framer works a total of  $22\frac{1}{2}$  hours per week.

**Level**

Numeracy, Level 2





**Mail to:**  
200 Front Street West,  
Toronto ON M5V 3J1

**OR Fax to:**  
416 344-3200

### Construction Industry Questionnaire Attachment

print

reset

**Please print in black ink**

Thank you for contacting the Workplace Safety & Insurance Board (WSIB). In order for us to make a determination regarding your status under the Workplace Safety and Insurance Act, the following form must be completed in full and supporting documentation attached.

Please read and complete this form and the attached Construction Industry Questionnaire. Attach the requested documents and return to the WSIB by fax, mail or in person.

#### start Information

1. How many hours per week do you work for your current contractor? <b>22.5</b>		2. On what basis is your salary calculated (hourly, weekly, piecework, etc.)?	
3. What equipment is necessary to complete your work?			
4. Who provides the equipment?		5. Who pays for the equipment?	
6. Do/did you hire (please check either yes or no)			
Part-time help? <input type="checkbox"/> Yes <input type="checkbox"/> No		Full-time help? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Subcontractors? <input type="checkbox"/> Yes <input type="checkbox"/> No		Family members? <input type="checkbox"/> Yes <input type="checkbox"/> No	
		Casual help? <input type="checkbox"/> Yes <input type="checkbox"/> No	
If you answered yes to any box in question 6, please advise:		7. How many helpers do you hire?	8. Date hired (dd/mm/yyyy)
<p>Upon signing the Construction Industry Questionnaire, you agree to provide the WSIB the right to verify your responses.</p> <p><b>Please include copies of:</b></p> <ul style="list-style-type: none"> <li>Canada Revenue Agency, CRA (formerly Canada Customs &amp; Revenue Agency) Employer Number (if applicable), and Business Registration/Articles of Incorporation from the Ministry of Consumer and Business Services (MCBS).</li> <li>Brochures/pamphlets/yellow page ad used to advertise your business, if applicable.</li> <li>Proof that you file GST.</li> <li>All invoices and contracts for work completed for your current contractor within the last six (6) months. If not available, please explain:</li> </ul>			
<ul style="list-style-type: none"> <li>Five (5) to seven (7) invoices or contracts for work completed for other contractors within the last six (6) months. If not available, please explain:</li> </ul>			
<ul style="list-style-type: none"> <li>Purchase orders/receipts for materials supplied within the last three (3) to six (6) months. If not available, please explain:</li> </ul>			
<ul style="list-style-type: none"> <li>Last filed tax return with CCRA - T1 General with Statement of Business Activities (T2124).</li> </ul>			
Cellular Telephone No. ( )		e-mail address (if applicable)	

#### Additional Information

The **Workplace Safety and Insurance Act** does not automatically cover individuals ruled to be Independent Operators. These individuals may request coverage through the **WSIB's Optional Insurance Policy**.

2023A (02/06)

**Please return with the completed Construction Industry Questionnaire.**

[www.wsib.on.ca](http://www.wsib.on.ca)

Reprinted with permission of Workplace Safety and Insurance Board of Ontario.

## Independent Operator Questionnaire

Employers may require framers to complete forms to show that they have insurance. Look at Independent Operator Questionnaire.

**6**

A framer owns and uses their own power saws, hand tools, compressor, table saw, and air tools. Enter this information on the form.

**Answer** See the Independent Operator Questionnaire question 6 answer page.

### One way to get this answer

1. Scan the page using the keywords *power saws, hand tools, compressor, table saw, and air tools* or words that mean tools.
2. Locate 3. *What equipment is necessary to complete your work?*
3. Decide that equipment could mean tools.
4. Decide that power saws, hand tools, compressor, table saw, and air tools are examples of equipment necessary to complete work.
5. Enter these tools next to 3. *What equipment is necessary to complete your work?*

**Level** Document Use, Level 2  
**CLB** 5 & 6 (estimated performance)



**Mail to:**  
200 Front Street West,  
Toronto ON M5V 3J1

**OR Fax to:**  
416 344-3200

### Construction Industry Questionnaire Attachment

print

reset

**Please print in black ink**

Thank you for contacting the Workplace Safety & Insurance Board (WSIB). In order for us to make a determination regarding your status under the Workplace Safety and Insurance Act, the following form must be completed in full and supporting documentation attached.

Please read and complete this form and the attached Construction Industry Questionnaire. Attach the requested documents and return to the WSIB by fax, mail or in person.

#### start Information

1. How many hours per week do you work for your current contractor?		2. On what basis is your salary calculated (hourly, weekly, piecework, etc.)?	
3. What equipment is necessary to complete your work?		power saws, hand tools, compressor, table saw, and air tools	
4. Who provides the equipment?		5. Who pays for the equipment?	
6. Do/did you hire (please check either yes or no)			
Part-time help? <input type="checkbox"/> Yes <input type="checkbox"/> No		Full-time help? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Subcontractors? <input type="checkbox"/> Yes <input type="checkbox"/> No		Family members? <input type="checkbox"/> Yes <input type="checkbox"/> No	
		Casual help? <input type="checkbox"/> Yes <input type="checkbox"/> No	
If you answered yes to any box in question 6, please advise:		7. How many helpers do you hire?	8. Date hired (dd/mm/yyyy)
<p>Upon signing the Construction Industry Questionnaire, you agree to provide the WSIB the right to verify your responses.</p> <p><b>Please include copies of:</b></p> <ul style="list-style-type: none"> <li>Canada Revenue Agency, CRA (formerly Canada Customs &amp; Revenue Agency) Employer Number (if applicable), and Business Registration/Articles of Incorporation from the Ministry of Consumer and Business Services (MCBS).</li> <li>Brochures/pamphlets/yellow page ad used to advertise your business, if applicable.</li> <li>Proof that you file GST.</li> <li>All invoices and contracts for work completed for your current contractor within the last six (6) months. If not available, please explain:</li> </ul>			
<ul style="list-style-type: none"> <li>Five (5) to seven (7) invoices or contracts for work completed for other contractors within the last six (6) months. If not available, please explain:</li> </ul>			
<ul style="list-style-type: none"> <li>Purchase orders/receipts for materials supplied within the last three (3) to six (6) months. If not available, please explain:</li> </ul>			
<ul style="list-style-type: none"> <li>Last filed tax return with CCRA - T1 General with Statement of Business Activities (T2124).</li> </ul>			
Cellular Telephone No. ( )		e-mail address (if applicable)	

#### Additional Information

The **Workplace Safety and Insurance Act** does not automatically cover individuals ruled to be Independent Operators. These individuals may request coverage through the **WSIB's Optional Insurance Policy**.

2023A (02/06)

**Please return with the completed Construction Industry Questionnaire.**

[www.wsib.on.ca](http://www.wsib.on.ca)

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## Independent Operator Questionnaire

Employers may require framers to complete forms to show that they have insurance. Look at Independent Operator Questionnaire.

**7**

The framer works on his own, without hiring any help.  
Enter this information on the form.

**Answer** See the Independent Operator Questionnaire question 7 and 8 answer page.

### One way to get this answer

1. Scan the page using the keyword *hiring* or similar words.
2. Locate 6. *Do/did you hire (please check either yes or no)*.
3. Recognize that an incomplete question such as “Do/did you hire” is completed in another part of the form.
4. Locate *Part-time help* and *Yes* and *No*.
5. Decide that the complete question is “Do/did you hire part-time help?”
6. Locate from question 7 *without hiring any help*.
7. Decide that the framer did not hire any help and that *No* means the same as *without hiring any help*.
8. Enter a ✓ next to *No* in the row *Part-time help*.
9. Locate *Subcontractors*, *Full-time help*, *Family members*, and *Casual help*.
10. Recognize from step 5 that *Subcontractors*, *Full-time help*, *Family members*, and *Casual help* also complete the question “Do/did you hire”.

11. Recognize from steps 6 and 7 that the framer did not hire any help, and that No means the same as without hiring any help.
12. Enter ✓ next to *No* in the rows Subcontractors, Full-time help, Family members, and Casual help.

**Level** Document Use, Level 2  
**CLB** 5 & 6 (estimated performance)



## Independent Operator Questionnaire

Employers may require framers to complete forms to show that they have insurance. Look at Independent Operator Questionnaire.

**8**

Complete the information for questions 7 and 8 on the form. Enter either the information the framer needs to provide, or enter “n/a” if no information is needed.

**Answer** See the Independent Operator Questionnaire question 7 and 8 answer page.

### One way to get this answer

1. Scan the page using the keywords 7. and 8.
2. Locate 7. *How many helpers do you hire?* and 8. *Date hired.*
3. Follow the row and locate *If you answered yes to any box in question 6, please advise:*
4. Locate 6. *Do/did your hire (please check either yes or no)* and the five rows of *Yes*.
5. Decide that the framer did not answer *yes* to any box in question 6.
6. Decide that the framer didn't hire anyone to work with him, and *How many helpers* and *Date hired* do not apply.
7. Locate from question 8 enter “n/a” *if no information is needed.*
8. Enter *n/a* next to 7. *How many helpers do you hire?*
9. Enter *n/a* next to 8. *Date hired.*

**Level** Document Use, Level 2  
**CLB** 5 & 6 (estimated performance)



**Mail to:**  
200 Front Street West,  
Toronto ON M5V 3J1

**OR Fax to:**  
416 344-3200

### Construction Industry Questionnaire Attachment

**Please print in black ink**

Thank you for contacting the Workplace Safety & Insurance Board (WSIB). In order for us to make a determination regarding your status under the Workplace Safety and Insurance Act, the following form must be completed in full and supporting documentation attached.

Please read and complete this form and the attached Construction Industry Questionnaire. Attach the requested documents and return to the WSIB by fax, mail or in person.

#### start Information

**1.** How many hours per week do you work for your current contractor?

**2.** On what basis is your salary calculated (hourly, weekly, piecework, etc.)?

**3.** What equipment is necessary to complete your work?

**4.** Who provides the equipment?

**5.** Who pays for the equipment?

**6.** Do/did you hire (please check either yes or no)

Part-time help?

☐ Yes

☒ No

Subcontractors?

☐ Yes

☒ No

Full-time help?

☐ Yes

☒ No

Family members?

☐ Yes

☒ No

Casual help?

☐ Yes

☒ No

If you answered yes to any box in question 6, please advise:

**7.** How many helpers do you hire?

n/a

**8.** Date hired (dd/mm/yyyy)

n/a

Upon signing the Construction Industry Questionnaire, you agree to provide the WSIB the right to verify your responses.

#### Please include copies of:

- Canada Revenue Agency, CRA (formerly Canada Customs & Revenue Agency) Employer Number (if applicable), and Business Registration/Articles of Incorporation from the Ministry of Consumer and Business Services (MCBS).
- Brochures/pamphlets/yellow page ad used to advertise your business, if applicable.
- Proof that you file GST.
- All invoices and contracts for work completed for your current contractor within the last six (6) months. If not available, please explain:

- Five (5) to seven (7) invoices or contracts for work completed for other contractors within the last six (6) months. If not available, please explain:

- Purchase orders/receipts for materials supplied within the last three (3) to six (6) months. If not available, please explain:

- Last filed tax return with CCRA - T1 General with Statement of Business Activities (T2124).

Cellular Telephone No.

( )

e-mail address (if applicable)

#### Additional Information

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2023A (02/06)

**Please return with the completed Construction Industry Questionnaire.**

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18

How Do Your Skills Measure Up?

## Independent Operator Questionnaire

Employers may require framers to complete forms to show that they have insurance. Look at Independent Operator Questionnaire.

**9**

Highlight items the framer might have to provide with the completed form.

**Answer** See the Independent Operator Questionnaire question 9 answer page.

### One way to get this answer

1. Scan the page using the keyword *provide*.
2. Locate the heading *Please include copies of*.
3. Decide that *include* could mean the same as *provide*.
4. Locate *Canada Revenue Agency, CRA (formerly Canada Customs & Revenue Agency) Employer Number (if applicable), and Business Registration/Articles of Incorporation from the Ministry of Consumer and Business Services (MCBS)*.
5. Decide that Canada Revenue Agency, CRA Employer Number and Business Registration/Articles of Incorporation are items the framer might have to provide.
6. Locate *Brochures/pamphlets/yellow page ad used to advertise your business, if applicable*.
7. Decide that Brochures/pamphlets/yellow page ad are items the framer might have to provide.
8. Locate *Proof that you file GST*.
9. Decide that Proof that you file GST is an item the framer might have to provide.

10. Locate *All invoices and contracts for work completed for your current contractor within the last six (6) months.*
11. Decide that all invoices and contracts for work completed for the framer's current contractor within the last six (6) months are items the framer might have to provide.
12. Locate the 3 rows of bullets starting with *Five (5) to seven (7)...*  
*Purchase orders/receipts...* and *Last filed....*
13. Decide that these rows are part of the section under the heading *Please include copies of.*
14. Decide that Five (5) to seven (7) invoices or contracts for work completed for other contractors within the last six (6) months are items the framer might have to provide.
15. Decide that Purchase orders/receipts for materials supplied within the last three (3) to six (6) months are items the framer might have to provide.
16. Decide that Last filed tax return with CCRA - T1 General with Statement of Business Activities (T2124) are items the framer might have to provide.

**Level**  
**CLB**

Document Use, Level 2  
5 & 6 (estimated performance)



**Mail to:**  
200 Front Street West,  
Toronto ON M5V 3J1

**OR Fax to:**  
416 344-3200

**Please print in black ink**

## Construction Industry Questionnaire Attachment

print

reset

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Please read and complete this form and the attached Construction Industry Questionnaire. Attach the requested documents and return to the WSIB by fax, mail or in person.

### start Information

<b>1.</b> How many hours per week do you work for your current contractor?		<b>2.</b> On what basis is your salary calculated (hourly, weekly, piecework, etc.)?																			
<b>3.</b> What equipment is necessary to complete your work?																					
<b>4.</b> Who provides the equipment?		<b>5.</b> Who pays for the equipment?																			
<b>6.</b> Do/did you hire (please check either yes or no) <table border="0"> <tr> <td>Part-time help?</td> <td><input type="checkbox"/> Yes</td> <td><input type="checkbox"/> No</td> <td>Full-time help?</td> <td><input type="checkbox"/> Yes</td> <td><input type="checkbox"/> No</td> </tr> <tr> <td>Subcontractors?</td> <td><input type="checkbox"/> Yes</td> <td><input type="checkbox"/> No</td> <td>Family members?</td> <td><input type="checkbox"/> Yes</td> <td><input type="checkbox"/> No</td> </tr> <tr> <td></td> <td></td> <td></td> <td>Casual help?</td> <td><input type="checkbox"/> Yes</td> <td><input type="checkbox"/> No</td> </tr> </table>				Part-time help?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	Full-time help?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	Subcontractors?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	Family members?	<input type="checkbox"/> Yes	<input type="checkbox"/> No				Casual help?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Part-time help?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	Full-time help?	<input type="checkbox"/> Yes	<input type="checkbox"/> No																
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			Casual help?	<input type="checkbox"/> Yes	<input type="checkbox"/> No																
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Cellular Telephone No. (       )		e-mail address (if applicable)																			

### Additional Information

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2023A (02/06)

**Please return with the completed Construction Industry Questionnaire.**

[www.wsib.on.ca](http://www.wsib.on.ca)

## Independent Operator Questionnaire

Employers may require framers to complete forms to show that they have insurance. Look at Independent Operator Questionnaire.

**10**

The Workplace Safety and Insurance Board decides that the framer is an Independent Operator. What might the framer have to do to be hired by a contractor?

**Answer**     request coverage through the WSIB's Optional Insurance Policy

### One way to get this answer

1. Scan the page using the keywords *Independent Operator*.
2. Locate at the bottom of the page *Workplace Safety and Insurance Act* and *does not automatically cover individuals ruled to be Independent Operators* and *These individuals may request coverage through the WSIB's Optional Insurance Policy*.
3. Decide that *ruled to be* means the same as decide, and *individuals* could be framers.
4. Decide that the WSIB does not automatically give coverage to framers ruled to be Independent Operators.
5. Decide that contractors may only hire Independent Operators who do have insurance coverage.
6. Decide that contractors may not pay the insurance coverage of Independent Operators they hire.
7. Decide that if the framer is an Independent Operator, they may have to request coverage through the WSIB's Optional Insurance Policy.

**Level**     Document Use, Level 2  
**CLB**     5 & 6 (estimated performance)



## Pipe Data—Solvent Cementing

Steamfitters and pipefitters refer to handbooks when assembling fittings and pipes. Look at Pipe Data—Solvent Cementing.

**11**

Why is it necessary to remove all burrs and ridges from the pipe end?

**Answer** They will wipe away the cement when fitting the joint together.

### One way to get this answer

1. Scan the pages using the keywords *remove* and *burrs and ridges*.
2. Locate 2. *Remove all burrs and ridges from the pipe end. Ridges or raised beads on the pipe will have a tendency to wipe away the cement when fitting the joint together* on page 75.
3. Decide that it is necessary to remove burrs and ridges from the pipe end because they will have a tendency to wipe away the cement when fitting the joint together.

**Level**  
**CLB**

Reading Text, Level 2  
5, 6 & 7 (estimated performance)

## Pipe Data—Solvent Cementing

Steamfitters and pipefitters refer to handbooks when assembling fittings and pipes. Look at Pipe Data—Solvent Cementing.

**12**

What is the initial set time needed for a 90 mm pipe if the temperature is 10°C?

**Answer**    4 hours

### One way to get this answer

1. Identify what is required: the initial set time.
2. Scan the pages using the keywords *initial set time*.
3. Locate the heading *Initial Set and Cure Items* on page 77.
4. Locate the heading *Initial Set Time* and the headings underneath.
5. Scan these headings and decide they show temperature ranges and pipe sizes.
6. Locate the heading *Temperature Range* and the 3 rows of temperature ranges.
7. Locate 10°C in question 12.
8. Decide that 15°–40°C in the first row is more than 10°C, and that –20°–+5°C in the third row is less than 10°C.
9. Decide that 10°C is between 5°–15°C.
10. Locate the pipe size 90 mm from question 12.
11. Locate the heading 3½" to 8" (90 mm to 200 mm).
12. Decide that 90 mm means a 90 mm pipe.

13. Locate the column  $3\frac{1}{2}"$  to  $8"$  ( $90\text{ mm}$  to  $200\text{ mm}$ ) and the row  $5^{\circ} - 15^{\circ}\text{C}$ , and where they intersect, locate  $4\text{ HR}$ .
14. Decide that  $\text{HR}$  means hours.
15. Decide that the initial set time needed for a  $90\text{ mm}$  pipe at  $10^{\circ}\text{C}$  is 4 hours.

**Level**      Numeracy, Level 2

## Pipe Data—Solvent Cementing

Steamfitters and pipefitters refer to handbooks when assembling fittings and pipes. Look at Pipe Data—Solvent Cementing.

**13**

Solvent cement is used to join a 250 mm pipe and fitting. If the temperature is 20°C and the weather is very humid, how many hours are needed to allow for cure time?

**Answer**    36 hours

### One way to get this answer

1. Identify what is required: the number of hours for cure time.
2. Scan the pages using the keywords *hours* and *cure time*.
3. Locate the heading *Cure Times* on page 77.
4. Decide that this table may have information about the number of hours for cure time.
5. Scan the headings and decide they show temperature ranges and pipe sizes.
6. Locate the heading *Temperature Range* and the 3 rows of temperature ranges.
7. Locate 20°C in question 13.
8. Decide that 5° – 15°C and –20° – +5°C in the last 2 rows are less than 20°C.
9. Decide that 20°C is between 15° – 40°C.
10. Locate the pipe size 250 mm in question 13.
11. Locate the heading 10" to 14" (250 mm to 350 mm).

12. Decide that 250 mm means a 250 mm pipe.
13. Locate the column *10" to 14" (250 mm to 350 mm)* and the row *15° – 40°C*, and where they intersect, locate *24 HR*.
14. Decide that 24 HR means 24 hours and the cure time is 24 hours.
15. Continue to scan the table using the keyword *humid*.
16. Notice *Note 1, 2 and 3* at the bottom of the table.
17. Recognize that Notes give additional information.
18. Locate 3. *50% more cure time is required in damp or humid conditions*.
19. Decide that 50% more cure time is required in humid conditions.
20. Set up the problem to calculate the cure time in humid conditions:  
dry cure time + (50% × dry cure time) = humid cure time
21. Convert the percentage to a decimal: 50% = 0.50
22. Calculate:  $24 + (0.50 \times 24) = 24 + 12 = 36$
23. Decide that the cure time in humid conditions is 36 hours.

**Level** Numeracy, Level 3

## Pipe Data—Solvent Cementing

Steamfitters and pipefitters refer to handbooks when assembling fittings and pipes. Look at Pipe Data—Solvent Cementing.

**14**

A pipefitter has just cemented the joint of an 80 mm pipe. The temperature is 10°C and it is raining. Cementing is finished at 1:00 p.m. What is the earliest time of the day that the pipefitter can test the pipe by applying line pressure?

**Answer**    7:00 p.m.

### One way to get this answer

1. Identify what is required: the earliest time of day.
2. Scan the pages using the keywords *time*, *test the pipe* and *line pressure*.
3. Locate the headings *Initial Set Time* and *Cure Times* on page 77.
4. Notice *Note 1,2* and *3* at the bottom of the table.
5. Recognize that Notes give additional information.
6. Locate *Note 2. Cure times indicates required time before testing or before line pressure can be applied.*
7. Decide that cure time indicates required time before line pressure can be applied.
8. Locate the heading *Temperature Range* and the 3 rows of temperature ranges under *Cure Times*.
9. Locate 10°C in question 14.
10. Decide that 15° – 40°C in the first row is more than 10°C, and that –20° – + 5°C in the third row is less than 10°C.
11. Decide that 10°C is between 5° – 15°C.
12. Locate 80 mm pipe from question 14.



13. Locate the heading  $1\frac{1}{2}"$  to  $3"$  ( $40\text{ mm}$  to  $80\text{ mm}$ ).
14. Decide that  $80\text{ mm}$  means  $80\text{ mm}$  pipe.
15. Locate the column  $1\frac{1}{2}"$  to  $3"$  ( $40\text{ mm}$  to  $80\text{ mm}$ ) and the row  $5^{\circ} - 15^{\circ}\text{C}$ , and where they intersect, locate  $4$  to  $24\text{ HR}$ .
16. Decide that  $\text{HR}$  means hours, and  $4$  to  $24\text{ HR}$  means a minimum of  $4$  hours and a maximum of  $24$  hours.
17. Locate *earliest* in question 14.
18. Decide that earliest means the same as minimum.
19. Decide that the cure time is  $4$  hours.
20. Locate *raining* in question 14.
21. Locate *Note: 3. 50% more cure time is required in damp or humid conditions.*
22. Decide that raining is a damp condition, so  $50\%$  more cure time is required.
23. Set up the problem to calculate the cure time in damp conditions:  
 $\text{dry cure time} + (50\% \times \text{dry cure time}) = \text{damp cure time}$
24. Convert the percentage to a decimal:  $50\% = 0.50$
25. Calculate:  $4 + (0.50 \times 4) = 4 + 2 = 6$
26. Decide that the cure time in damp conditions is  $6$  hours.
27. Locate *Cementing is finished at 1:00 p.m.* in question 14.
28. Set up the problem to calculate the earliest time to test the pipe:  
 $\text{finish time} + \text{curing time} = \text{earliest time to test the pipe}$
29. Calculate:  $1:00\text{ p.m.} + 6\text{ hours} = 7:00\text{ p.m.}$
30. Decide the earliest time of day that the pipefitter can test the pipe by applying line pressure is  $7:00\text{ p.m.}$

**Level** Numeracy, Level 3

## Pipe Data—Solvent Cementing

Steamfitters and pipefitters refer to handbooks when assembling fittings and pipes. Look at Pipe Data—Solvent Cementing.

**15**

A pipefitter cements a 500 millimetre pipe on a hot, humid day (28° C). How many days must pass before the cement completely cures?

**Answer**    4½ days or 4.5 days

### One way to get this answer

1. Identify what is required: the number of days.
2. Scan the pages using the keywords *days* and *cures*.
3. Locate the heading *Initial Set and Cure Items* on page 77.
4. Locate the column headings  $\frac{1}{2}"$  to  $1\frac{1}{4}"$  (15 mm to 32 mm),  $1\frac{1}{2}"$  to  $3"$  (40 mm to 80 mm) ....
5. Decide these headings are pipe sizes.
6. Locate *500 millimetre pipe* in question 15.
7. Locate the heading *16" to 24" (400 mm to 600 mm)*.
8. Decide that 500 is between 400 and 600, and *mm* means *millimetre*.
9. Locate the column *Temperature Range* and the 6 rows of temperature ranges.
10. Locate the heading *Cure Times*.
11. Locate the temperature, 28° C, from question 15.
12. Decide that 28° C is between 15°- 40° C.

13. Decide that  $28^{\circ}\text{C}$  is above the temperatures in the other rows.
14. Locate the row  $15^{\circ}\text{--}40^{\circ}\text{C}$  and where it intersects with the column  $16''\text{ to }24''$  ( $400\text{ mm to }600\text{ mm}$ ), locate  $48\text{ to }72\text{ HR}$ .
15. Decide that  $48\text{ to }72\text{ HR}$  means  $48\text{ to }72\text{ hours}$ .
16. Decide that  $72$  is the maximum cure time.
17. Continue to scan the table using *humid*.
18. Notice *Note 1,2* and *3* at the bottom of the table.
19. Recognize that Notes give additional information.
20. Locate *3. 50% more cure time is required in damp or humid conditions*.
21. Decide that  $50\%$  more cure time is required in a humid condition.
22. Set up the problem to calculate the cure time in humid conditions:  
 $\text{dry cure time} + (50\% \times \text{dry cure time}) = \text{humid cure time}$
23. Convert the percentage to a decimal:  $50\% = 0.50$
24. Calculate:  $72 + (0.50 \times 72) = 72 + 36 = 108\text{ hours}$
25. Decide that the cement takes  $108\text{ hours}$  to cure.
26. Set up the problem to calculate the number of days:  
 $\text{number of hours} \div 24 = \text{number of days}$
27. Calculate:  $108 \div 24 = 4.5$
28. Decide the pipefitter must wait  $4.5$  or  $4\frac{1}{2}$  days for the cement to completely cure.

**Level**      Numeracy, Level 3

## Eye Protection

Sheet Metal Workers wear personal protection equipment to protect them from hazards on the job. Look at the safety eyewear article *The Eyes Have It*.

**16**

The worker needs to learn about eye protection. Highlight, underline or circle the words in the subtitle that explain what this article is about.

**Answer**    **eye protection**

See the Eye Protection question 16 answer page.

### One way to get this answer

1. Scan the page and headings for the subtitle.
2. Locate the words directly below the title *The eyes have it*.
3. Locate the subtitle, *Eye protection can save your vision – even your life. Here’s what you need to know*.
4. Decide that these words explain what the article is about, but the important words are eye protection.

**Level**  
**CLB**

Reading Text, Level 2  
5, 6 & 7 (estimated performance)



## The eyes have it

Eye protection can save your vision — even your life. Here's what you need to know.

By Gina Lego

Safety eyewear is an essential piece of personal protective equipment, but all too often workers wear the wrong kind or, even worse, don't wear it at all. The statistics are startling. In the five-year period ending 2004, WorkSafeBC accepted more than 9,200 short-term and long-term disability claims (excluding health care and rehabilitation costs) related to workplace eye injuries, at a cost of more than \$28 million.

### Types of protection

Conducting a worksite assessment is the first step in determining the correct fit between eye protection needs and job conditions. Whether a worker is exposed to flying particles from drilling or scaling, UVA/UVB rays, welding light and electrical arcs, or even bloodborne pathogens, each worksite is unique and will require careful selection of proper eye protectors.

Safety glasses provide minimum protection and are for general working conditions where dust, chips, or flying particles may present a hazard. They are available in a variety of styles and provide side protection in the form of shields or wraparound arms. Lenses should have an anti-fog treatment. Goggles provide higher impact, dust, and acid or chemical splash protection than safety glasses. Molded goggles, like those used for skiing, are suitable when workers are continually exposed to splash or fine dust, and should have indirect venting. For less fogging when working with large particles, direct-vent goggles are recommended.

Face shields protect the full face from injury and they offer the highest impact protection and shelter from spraying, chipping, grinding, chemicals, and bloodborne hazards. A face shield is considered a

Thanks to WorkSafeBC for permission to reprint "The eyes have it" from WorkSafeBC Magazine (pages 4 and 5, Sept./Oct. 2005 edition). Copies of this document and other workplace health and safety materials are available free of charge at WorkSafeBC.com.

## Eye Protection

Sheet Metal Workers wear personal protection equipment to protect them from hazards on the job. Look at the safety eyewear article *The Eyes Have It*.

**17**

Flying particles are one example of a workplace hazard. Name 4 other hazards or job conditions that require safety eyewear protection.

**Answer**    **Any 4 of:**  
**UVA/UVB rays, welding light and electrical arcs, bloodborne pathogens, dust, chips, flying particles**  
**Also acceptable: acid or chemical splash, splash, fine dust**

### One way to get this answer

1. Scan the article using the keywords *hazards* and *eyewear protection*.
2. Locate the heading *Types of protection*.
3. Locate *UVA/UVB rays, welding light and electrical arcs, or even bloodborne pathogens* in the first paragraph, and *dust, chips, or flying particles*, and *acid or chemical splash protection .... splash or fine dust* in the second paragraph.
4. Decide that any of these items are hazards or job conditions that require safety eyewear protection.

**Level**        Reading Text, Level 2  
**CLB**         5, 6 & 7 (estimated performance)



## Eye Protection

Sheet Metal Workers wear personal protection equipment to protect them from hazards on the job. Look at the safety eyewear article *The Eyes Have It*.

**18**

What are 3 types of safety eyewear protection?

**Answer**    safety glasses, goggles, and face shields

### One way to get this answer

1. Scan the page using the keywords *types of safety eyewear protection*.
2. Locate the heading *Types of protection*.
3. Locate *Safety glasses*, *Goggles* and *Face shields* in the second and third paragraphs of that section.
4. Decide that safety glasses, goggles and face shields are types of safety eyewear protection.

**Level**        Reading Text, Level 2  
**CLB**        5, 6 & 7 (estimated performance)

## Eye Protection

Sheet Metal Workers wear personal protection equipment to protect them from hazards on the job. Look at the safety eyewear article *The Eyes Have It*.

**19**

What are 2 actions workers can do to get maximum benefit from safety eyewear?

**Answer**

- be test fitted and assigned a personal set of protective eyewear
- instructed on its care and maintenance

### One way to get this answer

1. Scan the page using the keywords *maximum benefit*.
2. Locate the heading *Proper fit is critical* and *maximum benefit*.
3. Locate *In order to get the maximum benefit from safety eyewear, individuals should be test fitted and assigned a personal set of protective eyewear, then instructed on its care and maintenance*.
4. Decide that *test fitted and assigned a personal set of protective eyewear* and *instructed on its care and maintenance* are 2 actions workers can do to get maximum benefit from safety eyewear.

**Level** Reading Text, Level 2  
**CLB** 5, 6 & 7 (estimated performance)

## Eye Protection

Sheet Metal Workers wear personal protection equipment to protect them from hazards on the job. Look at the safety eyewear article *The Eyes Have It*.

**20**

Highlight, underline or circle 2 key messages to workers about safety eyewear protection in this article.

**Answer**

**Any 2 of:**

- **Proper fit is critical**
- **Don't take it off**

See the Eye Protection question 20 answer page.

### One way to get this answer

1. Scan the page and headings using the keywords *key messages to workers about safety eyewear protection*.
2. Recognize that headings can be main ideas or key messages.
3. Scan the headings and locate *Types of protection*, *Proper fit is critical* and *Don't take it off*.
4. Understand that key messages give advice or give information about what to do.
5. Decide which headings contain key messages.
6. Decide that *Types of protection* is important but is not a key message because it does not give advice or information about what to do.
7. Decide that headings such as *Proper fit is critical* and *Don't take it off* give key messages.

**Note:**

Other answers are possible.

**Level  
CLB**

Reading Text, Level 3  
7, 8 & 9 (estimated performance)

secondary safeguard to protective eyewear; it should never be worn without safety glasses or goggles.

### **Proper fit is critical**

In order to get the maximum benefit from safety eyewear, individuals should be test fitted and assigned a personal set of protective eyewear, then instructed on its care and maintenance. As with any personal item, safety eyewear is more likely to be used if it offers the right look and fit for the individual.

“One of the key factors in getting workers to wear safety eyewear is to offer a choice of styles that suits their individual needs,” says Kevin Birnie, WorkSafeBC (WCB) occupational safety officer. “People have a real preference for the type of eye protection they wear.”

Darren Giesbrecht, shop foreman at the Oakmont Industries Division of Guardian Building Products in Surrey, agrees. “Our workers are offered a choice of about six different styles.

If we don’t supply a style they like, we’ll reimburse them for one of their own choosing.”

### **Don’t take it off**

Choosing the right safety eyewear is important, but remember it can’t protect you if you’re not wearing it. “Accidents happen when and where you least expect,” says Ken Kirby, a WorkSafeBC engineer. “We often see eye injuries occurring outside of a worker’s usual workspace — not where the obvious hazards exist. For example, a worker will take off his protective eyewear to do a job in another area, and that’s when the accident occurs.”

That’s why Kirby feels workers can never be too careful. “Employers are encouraged to consider a general policy where workers are required to wear their protective eyewear at all times while on a worksite.”

### **Eye safety resources**

For more information, contact your WorkSafeBC officer, call the WorkSafe Call Centre at 604 276-3100, toll-free at 1 888 621-7233, or visit the following web sites:

- Occupational Health and Safety Regulation, Part 8: Eye and face protection <http://regulation.healthandsafetycentre.org/s/Part8.asp#SectionNumber:8.14>
- Canadian Centre for Occupational Health and Safety, Safety Glasses and Face Protectors [www.ccohs.ca/oshanswers/prevention/ppe/glasses.html](http://www.ccohs.ca/oshanswers/prevention/ppe/glasses.html)



Thanks to WorkSafeBC for permission to reprint “The eyes have it” from WorkSafeBC Magazine (pages 4 and 5, Sept./Oct. 2005 edition). Copies of this document and other workplace health and safety materials are available free of charge at WorkSafeBC.com.

## Hand Signals Reference Sheet

Crane Operators use cranes to lift and move equipment and materials on a construction site. They need to understand hand signals to move items safely. Look at the Hand Signals Reference Sheet.

**21**

Which track is locked when the Travel (One Track) signal is used?

**Answer**    the track on side indicated by raised fist

### One way to get this answer

1. Scan the page using the keywords *locked* and *Travel (One Track)*.
2. Locate *TRAVEL. (One Track). Lock the track on side indicated by raised fist* at the bottom left of the page.
3. Decide that the track on the side indicated by the raised fist is the track which is locked when the Travel (One Track) signal is used.

**Level**  
**CLB**

Document Use, Level 2  
5 & 6 (estimated performance)

## Hand Signals Reference Sheet

Crane Operators use cranes to lift and move equipment and materials on a construction site. They need to understand hand signals to move items safely. Look at the Hand Signals Reference Sheet.

**22**

Which 2 hand signals are for crawler cranes only?

**Answer**

- **Travel (Both Tracks)**
- **Travel (One Track)**

### One way to get this answer

1. Scan the page using the keywords *crawler cranes*.
2. Locate (*For crawler cranes only.*) in the section *TRAVEL. (Both Tracks)*.
3. Continue to scan the page using the keywords *crawler cranes*.
4. Locate (*For crawler cranes only.*) in the section *TRAVEL. (One Track)*.
5. Decide that Travel (Both Tracks) and Travel (One Track) are the 2 hand signals for crawler cranes only.

**Level** Document Use, Level 2  
**CLB** 5 & 6 (estimated performance)



## Hand Signals Reference Sheet

Crane Operators use cranes to lift and move equipment and materials on a construction site. They need to understand hand signals to move items safely. Look at the Hand Signals Reference Sheet.

**23**

Which hand signal can be combined with any motion signal?

**Answer**     **Move Slowly**

### One way to get this answer

1. Scan the page using the keywords *combined* and *motion signal*.
2. Locate *MOVE SLOWLY*. Use one hand to give any motion signal and place other hand motionless in front of hand giving the motion signal at the top left of the page.
3. Decide that using one hand to give any motion signal, and placing the other hand motionless in front of the hand giving the motion signal, is combining two signals.
4. Decide that Move Slowly is the hand signal that can be combined with any motion signal.

**Level**     Document Use, Level 2  
**CLB**     5 & 6 (estimated performance)

## Hand Signals Reference Sheet

Crane Operators use cranes to lift and move equipment and materials on a construction site. They need to understand hand signals to move items safely. Look at the Hand Signals Reference Sheet.

**24**

Which 2 hand signals can be done with either one or both hands?

**Answer**

- **Extend Boom**
- **Retract Boom**

### One way to get this answer

1. Scan the page using the keywords *one or both hands*.
2. Locate *MOVE SLOWLY. Use one hand to give any motion signal and place other hand motionless in front of hand...* at the top left of the page.
3. Decide that this is a signal that is done with two hands and not one or both hands.
4. Continue to scan the page using the keywords *one or both hands*.
5. Locate *EXTEND BOOM (Telescoping Booms). Both fists in front of body with thumbs pointing outward. One hand signal may be used* at the bottom of the page.
6. Decide that both fists means the same as both hands.
7. Decide that *one hand signal may be used* means one or both hands.
8. Decide that Extend Boom is one hand signal that may be done with either one or both hands.
9. Continue to scan the page using the keywords *one or both hands*.

10. Locate *RETRACT BOOM*. (*Telescoping Booms*). *Both fists in front of body with thumbs pointing toward each other. One hand signal may be used* at the bottom right of the page.
11. Recognize from steps 6 and 7 that both fists mean the same as both hands, and that *may* means one hand or both may be used to make this signal.
12. Decide that Retract Boom is the other hand signal that may be done with either one or both hands.
13. Decide that Extend Boom and Retract Boom are the 2 hand signals that may be done with either one or both hands.

**Level**  
**CLB**

Document Use, Level 2  
5 & 6 (estimated performance)

## Hand Signals Reference Sheet

Crane Operators use cranes to lift and move equipment and materials on a construction site. They need to understand hand signals to move items safely. Look at the Hand Signals Reference Sheet.

**25**

Circle the 3 signals used to direct a crawler crane to retract its boom and move forward about 5 metres on both tracks. Place 1, 2, or 3 inside each circle to show the order each signal is used.

**Answer** See the Hand Signals Reference Sheet question 25 answer page.

### One way to get this answer

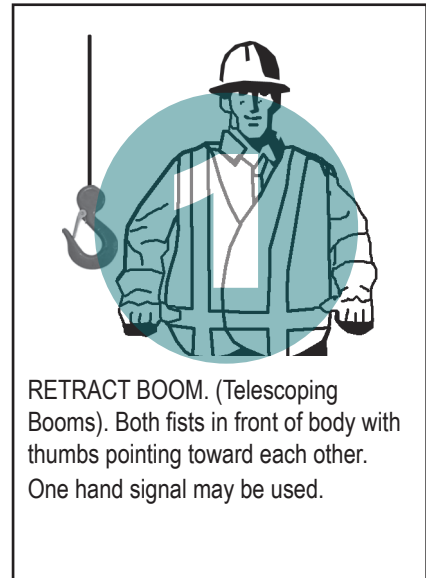
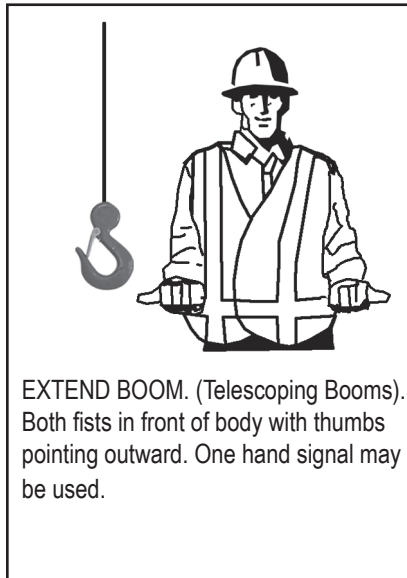
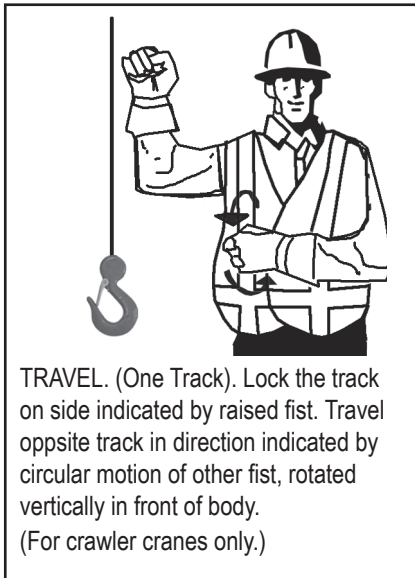
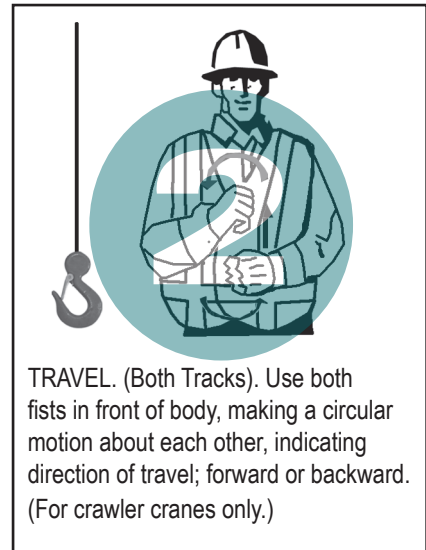
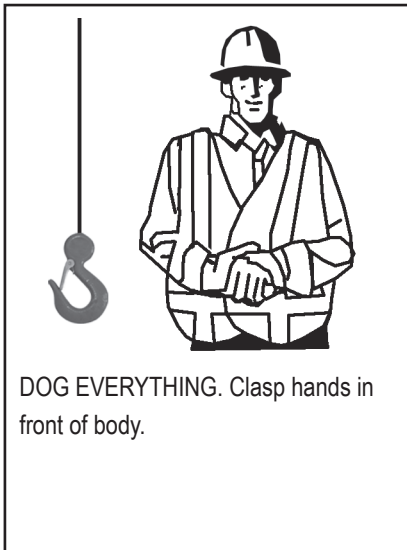
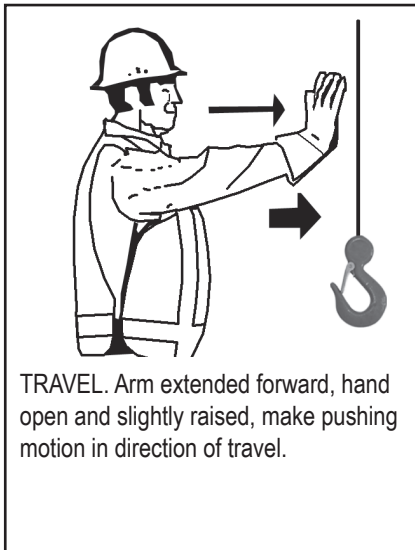
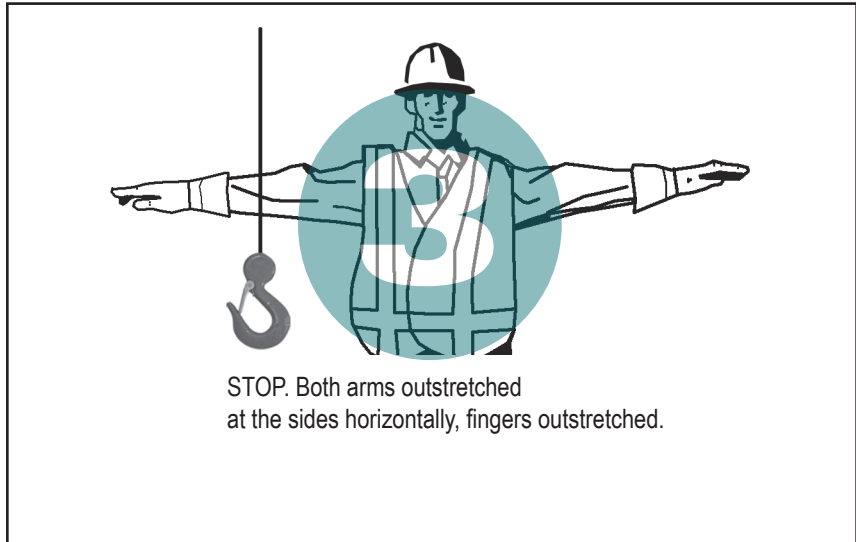
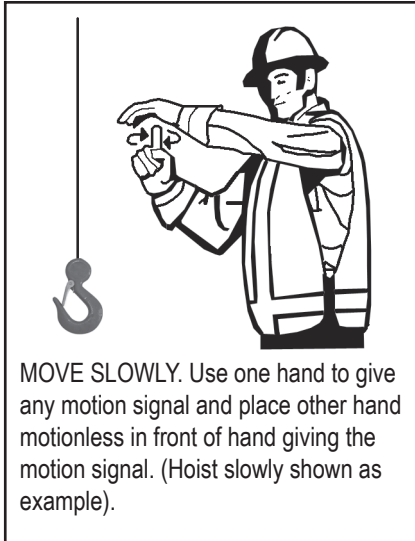
1. Scan the page using the keywords *crawler crane* and *retract its boom*.
2. Locate *Standard hand signals for controlling crane operations - crawler, locomotive and truck cranes* at the top of the page.
3. Decide that this page shows signals used to direct a crawler crane.
4. Recognize that there is someone on the worksite who is directing the crane operator.
5. Locate *RETRACT BOOM* at the bottom right of the page.
6. Decide that Retract Boom is the first hand signal.
7. Locate *move forward, 5 metres* and *both tracks* from the question.
8. Locate *TRAVEL. (Both Tracks). Use both fists in front of body... indicating direction of travel; forward or backward*.
9. Decide that travel means the same as move.
10. Decide that this signal is used to show *move forward*.

11. Decide that Travel (Both Tracks) is the second hand signal.
12. Scan the page using *metres*, or words meaning distance.
13. Decide that *metres* is not on the page.
14. Decide that the one who is directing the crane operator must tell the crane operator when to stop.
15. Locate *STOP* at the top right of the page.
16. Decide that Stop is the third hand signal.
17. Decide that the 3 signals used to direct a crawler crane to retract its boom and move forward about 5 metres on both tracks are: Retract Boom, Travel (Both Tracks) and Stop.

**Level**  
**CLB**

Document Use, Level 4  
9 & 10 (estimated performance)

Standard hand signals for controlling crane operations - crawler, locomotive and truck cranes.





## Load Weights

Boilermakers repair boilers, vessels, tanks, heat exchangers and other heavy-metal structures. A critical part of the work is preparing heavy loads for rigging. Look at the Load Weights - Calculating page.

**26**

Calculate the load weight of 200 cubic feet of steel.

**Answer**    96,000 pounds

### One way to get this answer

1. Identify what is required: the load weight of the steel.
2. Scan the document for keywords *load weight* and *steel*.
3. Locate the heading *Materials and Liquids – Pounds/ Cubic Feet*, and the row *Steel* and *480*.
4. Decide that *480* means 480 pounds/cubic foot.
5. Recognise that 480 pounds/cubic feet means that 1 cubic foot weighs 480 pounds.
6. If        1 cubic foot weighs        480 pounds  
Then    200 cubic feet weighs     $480 \times 200$  pounds.
7. Calculate:  $480 \times 200 = 96,000$  pounds
8. Decide that the load weight is 96,000 pounds.

**Level**        Numeracy, Level 2

## Load Weights

Boilermakers repair boilers, vessels, tanks, heat exchangers and other heavy-metal structures. A critical part of the work is preparing heavy loads for rigging. Look at the Load Weights - Calculating page.

**27**

What is the area of the aluminum disk? The area of a circle is approx. 80% of its diameter squared (diameter  $\times$  diameter)

**Answer**    80 square feet

### One way to get this answer

1. Identify what is required: the area of the disk.
2. Scan the document using keywords *aluminum disk* and *diameter*.
3. Locate *10' diameter*.
4. Decide that 10' is the diameter of the disk and 10' means 10 feet.
5. Set up the problem:  
 $\text{diameter} \times \text{diameter} \times 80\% = \text{area of the disk}$
6. Convert: 80% to 0.80
7. Calculate:  $10 \times 10 \times 0.80 = 80$
8. Decide that the area of the aluminum disk is 80 square feet.

**Level**    Numeracy, Level 3

## Load Weights

Boilermakers repair boilers, vessels, tanks, heat exchangers and other heavy-metal structures. A critical part of the work is preparing heavy loads for rigging. Look at the Load Weights - Calculating page.

**28**

How many pounds per square foot does the 3" thick aluminum disk weigh?

Pounds / Square Feet	
Aluminum plate	
$\frac{1}{4}"$	3.50

**Answer**    42 pounds per square foot

### One way to get this answer

1. Identify what is required: the weight of the disk.
2. Understand that the weight per square foot can be calculated using the thickness of the disk.
3. Scan the task and locate

Pounds / Square Feet	
Aluminum plate	
$\frac{1}{4}"$	3.50

4. Decide that a  $\frac{1}{4}"$  thick aluminum plate has a weight of 3.50 pounds / square foot or 3.50 pounds for every square foot.
5. Scan the diagram and decide that the disk is 3" thick.
6. Recognise that:  
If a  $\frac{1}{4}"$  thick plate weighs      3.50 pounds / square foot  
Then a    1" thick plate weighs       $3.50 \times 4$  pounds / square foot

7. If a 1" thick plate weighs  $3.50 \times 4$  pounds / square foot  
Then the 3" thick plate weighs  $3.50 \times 4 \times 3$  pounds / square foot.
8. Calculate:  $3.50 \times 4 \times 3 = 42$
9. Decide that the aluminum disk weighs 42 pounds per square foot.

**Level** Numeracy, Level 3

## Load Weights

Boilermakers repair boilers, vessels, tanks, heat exchangers and other heavy-metal structures. A critical part of the work is preparing heavy loads for rigging. Look at the Load Weights - Calculating page.

**29**

What is the total load weight of the aluminum disk?

load weight of the disk =

area of the disk  $\times$  weight of the disk in pounds / square foot

**Answer**    **3,360 pounds**

### One way to get this answer

1. Identify what is required: the total load weight.
2. Locate the area of the disk, 80 square feet, in the answer from question 27.
3. Locate the weight of the disk, 42 pounds, in the answer from question 28.
4. Set up the problem:  
area of the disk  $\times$  weight of the disk in pounds / square foot =  
load weight of the disk
5. Calculate: 80 sq. ft.  $\times$  42 lbs. per sq. ft. = 3,360 pounds
6. Decide that 3,360 pounds is the total load weight of the aluminum disk.

**Level**    Numeracy, Level 3

## Load Weights

Boilermakers repair boilers, vessels, tanks, heat exchangers and other heavy-metal structures. A critical part of the work is preparing heavy loads for rigging. Look at the Load Weights - Calculating page.

**30**

What is the outside circumference of the pipe?

- $\pi = 3.2$  (approx.)
- Circumference =  $\pi d$

**Answer**    19.2'

### One way to get this answer

1. Identify what is required: the outside circumference.
2. Scan the question for *circumference* and a formula.
3. Locate  $\text{circumference} = \pi d$  and  $\pi = 3.2$ .
4. Decide that this formula and value for  $\pi$  will give the outside circumference of the pipe.
5. Scan the headings and the page using keyword *pipe* and *d* and locate the diagram of the *Steel Pipe* and *6' diameter (d)*.
6. Set up the problem:  $\pi \times d = \text{circumference}$
7. Calculate:  $3.2 \times 6' = 19.2'$
8. Decide that the outside circumference of the pipe is 19.2'.

**Level**       Numeracy, Level 3



