Tilesetters NOC 7283

Introduction

Tilesetters cover interior and exterior walls, floors and ceilings with ceramic, marble and quarry tile, mosaics or terrazzo. They are employed by construction companies and masonry contractors, or they may be self-employed.

The three most important essential skills are:

- Reading
- Document Use
- Numeracy (Measurements and Calculation)

Note: Each Essential Skills task is followed by a number in brackets such as (2). This number reflects the estimated complexity rating for that task. The actual complexity rating may vary in some workplaces.

A. Reading	
Typical: 1 to 3	Most Complex: 3
Examples	

- Read directions, e.g., read directions on adhesive, grout and mortar packaging to learn the most effective way to use the product. (1)

- Read short notes, e.g, read short notes from co-workers to coordinate work activities. (1)

- Read short text entries on technical drawings and forms, e.g., read comments on work orders to learn the particulars of installation projects. (1)

- Read a variety of instructions, e.g., read instructions posted at job sites to learn about the requirements for personal protective equipment. (1)

- Read safety-related information, e.g., read Material Safety Data Sheets (MSDS) to learn how to safely handle products used to seal tile and grout. (2)

- Read email messages, e.g., read email messages from clients to learn about changes to project specifications. (2)

- Read manufacturers' notices and technical service bulletins, e.g., read technical service bulletins to learn about recurring faults with particular dry set mortars. (3)

- Read a variety of manuals and guides e.g., read procedure manuals and guides to learn how to install shower kits. (3)

- Read specifications, e.g., read specifications published by the Terrazzo Tile and Marble Association of Canada to learn about specifications for wall tile systems. (3)

- May read labour agreements, e.g., unionized tilesetters read labour agreements to learn about their rights and responsibilities. (3)

Reading Summary

Type of Text	Purpose for Reading			
	To scan for specific information/To locate information	To skim for overall meaning, to get the 'gist'	To read the full text to understand or to learn	To read the full text to critique or to evaluate

Forms				
Labels				
Notes, Letters, Memos				
Manuals, Specifications, Regulations				
Reports, Books, Journals				

B. Document Use	
Typical: 1 to 3	Most Complex: 3
Examples	

- Locate data such as dates, sizes, codes, costs and quantities on price tags, product labels and receipts. (1)

- Recognize symbols and icons, e.g., recognize WHMIS symbols on product packaging. (1)

- Recognize common angles to complete layout patterns. (1)

- Complete a variety of online and paper-based forms, e.g., complete online timesheets by entering dates, addresses, hours worked and tasks completed. (2)

- Locate data in specification tables, e.g., use specification tables to learn about set times, pressure tolerances, mixing ratios and temperature tolerances. (2)

- Interpret sketches and accompanying notations to learn about specific details referred to in a work order. (2)

- Obtain data from a wide variety of lists, schedules and tables, e.g., read work orders to learn about tasks to be performed, materials to be used, areas to be tiled, costs of materials ordered and project timelines. (2)

- Use technical drawings, e.g., use elevation drawings and floor plans to locate measurements and identify areas to be tiled, the types of tiles to use and layout patterns to follow. (3)

Document Use Summary

√	Read signs, labels or lists.
√	Complete forms by marking check boxes, recording numerical information or entering words, phrases, sentences or text of a paragraph or more.
√	Read completed forms containing check boxes, numerical entries, phrases, addresses, sentences or text of a paragraph or more.
√	Read tables, schedules or other table-like text (e.g., read production schedules).
√	Enter information on tables, schedules or other table-like text.
√	Recognize common angles such as 15, 30, 45 and 90 degrees.
√	Draw, sketch or form common shapes such as circles, triangles, spheres, rectangles, squares, etc.
√	Interpret scale drawings (e.g., floorplans or maps).
√	Take measurements from scale drawings.

√	Make sketches.
√	Obtain information from sketches, pictures or icons (e.g., WHMIS icons).

C. Writing

Typical: 1 to 2	Most Complex: 3

Examples

- Enter short comments on a variety of forms, e.g., write comments on work orders to indicate problems with installations. (1)

- Write brief memos, e.g., write brief memos to co-workers and general contractors to coordinate work activities and provide details about job progress. (1)

- May keep personal logbooks, noting information such as tasks to be completed, problems that have arisen, directions for reaching a job site, hours worked and materials that must be ordered. (1)

- Write email messages, e.g., write email messages to request information and confirm details about upcoming activities. (2)

- May write reports to describe events leading up to workplace accidents, e.g., write about injuries and events when completing reports for workers' compensation boards. (3)

Writing Summary

Length	Purpose for Writing						
	To organize or remember	To keep a record or document	To inform or request information	To persuade or justify a request	To present an analysis or comparison	To present an evaluation or critique	To entertain
Text requiring less than one paragraph of new text							
Text rarely requiring more than one paragraph							
Longer text							

D. Numeracy

Typical: 1 to 3	Most Complex: 3

Examples

Money Math

- May handle cash, credit card, debit card and *Interact* e-transfer transactions. (1)

Scheduling, Budgeting and Accounting Math

- May schedule the delivery of supplies and materials. (1)

- May prepare invoices and price quotes, e.g. self-employed tilesetters prepare invoices by

considering factors such as project scope and the costs associated with travel, labour, materials, wastage and applicable taxes. (3)

Measurement and Calculation Math

- Take measurements using basic measuring tools, e.g., measure the length of tiles using tape measures. (1)

- Measure slopes, e.g., measure the slope of a drain to determine if it corresponds to the slope stipulated in the blueprint. (1)

- Calculate summary measures, e.g., calculate the average amount of materials wasted during an installation project. (2)

- Calculate the requirement for materials, e.g., calculate the number of each type of tile required, taking into consideration the size and shape of the accent tiles being used as well as the colour and pattern sequence. (3)

- Measure mark-off points, e.g., measure mark-off points for a curved installation to ensure the curve is even. (3)

Data Analysis Math

- Compare measurements of size, thickness, time and temperatures to specifications, e.g., determine adherence to specifications by comparing joint width measurements to the measurements specified in drawings. (1)

Numerical Estimation

- Estimate the amount of time and number of tilesetters required to complete a job to ensure project timelines are viable. (1)

- May estimate the cost of the materials to be used on a job. (2)

- Estimate material requirements such as the number of tiles, and the amount of adhesive and grout required to complete a job. (2)

Math Skills Summary	
a. Mathematical Foundations Used	
Whole Numbers	Read and write, count, round off, add or subtract, multiply or divide whole numbers, e.g., multiply the number of boxes of tiles times the number of tiles in each box.
Integers	Read and write, add or subtract, multiply or divide integers, e.g., read positive and negative values for temperatures.
Fractions	Read and write, add or subtract fractions, multiply or divide by a fraction, multiply or divide fractions, e.g., add room dimensions that are measured in fractional units of inches and feet.
Decimals	Read and write, round off, add or subtract decimals, multiply or divide by a decimal, multiply or divide decimals, e.g., add room dimensions that are measured in metric units.
Percent	Read and write percents, calculate the percent one number is of another, calculate a percent of a number, e.g., estimate the percentage of a job that has been completed.

Equivalent Rational Numbers	Convert between fractions and decimals or percentages. Convert between decimals and percentage, e.g., use the percentage of tiles that must be accent tiles to calculate the number of accent tiles required.
Equations and Formulea	Solve problems by constructing and solving equations with one unknown. Use formulae by inserting quantities for variables and solving, e.g., calculate surface area by using the formula: area = length x width.
Use of Rate, Ratio and Proportion	Use a ratio showing comparison between two quantities with the same units, e.g., use ratios to determine the amount of water to add to mortar.
Measurement Conversions	Perform measurement conversions, e.g., convert inches to decimals when calculating the number of tiles required for a job.
Summary Calculations	Calculate averages, rates other than percentages and proportions or ratios, e.g., calculate average hourly wages and sales by day, week, month and year.
Areas, Perimeters, Volumes	Calculate areas, perimeters and volumes, e.g., calculate the perimeter of a floor surface to determine the number of border tiles required.
Geometry	Use geometry, e.g., square a room using the Pythagoras Theorem for 90 degree triangles.

b. Measurement Instruments Used

Examples

- Time using clocks, watches and stop watches.

- Distance and dimension using a tape measure, rule, level, water level, laser level, string, plumb bob and spacers.

- Angles using a square, protractor, divider and angle measurer.

- Use the SI (metric) measurement system.

- Use the imperial measurement system.

E. Oral Communication	
Typical: 1 to 3	Most Complex: 3
Examples	

- Speak with suppliers to verify orders, schedule pick-ups and return unused product. (1)

- Participate in meetings, e.g., participate in toolbox meetings by discussing job site hazards. (2)

- Speak with customers, e.g., speak with customers to coordinate schedules and arrange access to the work site. (2)

- Communicate with co-workers, architects and other tradespeople to coordinate work and schedule activities. (2)

- Discuss concerns and offer solutions, e.g., discuss concerns about inadequately prepared surfaces and scheduling conflicts with general contractors, and propose solutions. (3)

- May instruct apprentices on how to complete difficult lay-outs, and provide on-going feedback as work progresses. (3)

Oral Communication Summary

Type	Purpose for Oral Communication (Part I)					
	To greet	To take messages	To provide or receive information, explanation, direction	To seek, obtain information	To co-ordinate work with that of others	To reassure, comfort
Listening (little or no interaction)						
Speaking (little or no interaction)						
Interact with co-workers						
Interact with those you supervise or direct						
Interact with supervisor/manager						
Interact with peers and colleagues from other organization						
Interact with customers/clients/public						
Interact with suppliers, servicers						
Participate in group discussion						
Present information to a small group						
Present information to a large group						

Type	Purpose for Oral Communication (Part II)					
	To discuss (exchange information, opinions)	To persuade	To facilitate, animate	To instruct, instill understanding, knowledge	To negotiate, resolve conflict	To entertain
Listening (little or no interaction)						
Speaking (little or no interaction)						
Interact with co-workers						
Interact with those						

you supervise or direct						
Interact with supervisor/manager						
Interact with peers and colleagues from other organization						
Interact with customers/clients/ public						
Interact with suppliers, servicers						
Participate in group discussion						
Present information to a small group						
Present information to a large group						

F. Thinking	
Typical: 1 to 3	Most Complex: 3
a. Problem Solving	
Examples	

- Encounter unsafe work conditions and improperly prepared job sites. They assess the situation to determine what action should be taken and implement the solution they decide is appropriate. (2)

- Encounter shortages of material such as tiles and mortar. If the material is in stock, they have it delivered. If supplies are either unavailable or temporarily out of stock, tilesetters arrange with the client or supervisor to reschedule the job, modify the design to accommodate alternative materials or re-do the job with materials that are readily available. (2)

- Are unable to complete tasks because specifications and instructions are unavailable. They consult manufacturers, co-workers, suppliers and colleagues for advice and research websites to locate useable information. (2)

- Are unable to meet deadlines because of delays caused by other trades. They speak with the tradesperson to find ways to speed up their work. They seek the assistance of supervisors and general contractors if the delays are significant. (2)

b. Decision Making
Examples

- Decide which surfaces to tile first. (1)

- Decide which tools to use and procedures to follow to complete a job to required specifications. (2)

- Decide not to commence work at job sites that are poorly prepared and significantly out of

alignment. (2)

- Decide how to layout projects by considering worksite conditions and project specifications. (3).

- May select materials and suppliers, e.g., self-employed tilesetters decide which brands and types of materials to use by considering specifications, warranties, costs and ease of use. (3)

- May select which jobs to bid on and accept, e.g., self-employed tilesetters consider project scopes, timelines, budgets and the availability of materials and labour. (3)

c. Critical Thinking

Examples

- Evaluate the severity of workplace hazards, e.g. consider the potential dangers presented by exposed wiring and fall hazards. (2)

- Evaluate the performance of apprentices and helpers. They consider factors such as their technical skills and ability to work with others. (2)

- Evaluate the appropriateness of materials for specific applications. They consider the degree to which the intended use meets manufacturer and Terrazzo Tile and Marble Association of Canada (TTMAC) specifications. (2)

- Evaluate job sites, e.g., consider factors such as the condition and plumbness of surfaces to be tiled. (2)

- Evaluate the overall quality of their work. They consider their adherence to manufacturer and Terrazzo Tile and Marble Association of Canada (TTMAC) specifications and factors such as the quality of tile bonding and the width, uniformity and alignment of tiles, grout lines and patterns. (3)

d. Job Task Planning and Organizing

For most jobs, tilesetters are given a working drawing or work order to follow. At commercial job sites, they often work with supervisors to decide upon task sequencing and work priorities. Time management is determined by the project timelines. If more than one tilesetter is on site, they usually decide among themselves their areas of responsibility. At construction sites, tilers coordinate their work schedules with other trades. In many cases, tilesetters dependent on other trades to prepare surfaces adequately or they cannot begin their work. In the residential sector, tilers must organize their work according to the schedule of the occupants. (3)

Own Job Planning and Organizing

Tilesetter's own work plan is dictated by the tile setting procedure - the steps are well defined and must be completed in an established order. Self-employed tilesetters additionally plan the delivery of materials and meetings with others such as clients, architects and general contractors. (2)

e. Significant Use of Memory

Examples

- Remember special client instructions not normally associated with a procedure, such as an unusual approach to terrazzo installation, an unusual placement of accent tiles, or an unusual layout pattern.

- Remember job-specific installation details such as grout colour, layout pattern and special

instructions if they are working on several projects concurrently.

- Remember which setting products work best in specific situations and with specific materials.

- Remember where they left off in projects when they are working on two or more projects concurrently.

f. Finding Information

Examples

- Locate product information, such as descriptions, application techniques, specifications, costs and availabilities by speaking with suppliers and by reviewing catalogues, brochures, price lists and information posted on manufacturers' websites. (2)

- Locate information about project requirements by reading work orders, speaking with clients, reviewing floor plans, referring to occupational health and safety guidelines and by visiting job sites. (3)

G. Working With Others

In a commercial setting, tilesetters usually work with an assistant. They may also work with other tilesetters on the same site although each tilesetter would complete a different tiling project at that site. Tilesetters often work independently and are often responsible for an assigned project from beginning to end. In some cases, two tilesetters will work together, one doing the main floor area and the other addressing the more complex and time-consuming components. Tilesetters can also be part of a larger construction team that includes a variety of tradespersons.

Participation in Supervisory or Leadership Activities

√	Monitor the work performance of others.
√	Inform other workers or demonstrate to them how tasks are performed.
√	Orient new employees.
X	Make hiring recommendations.
√	Assign routine tasks to other workers.
X	Assign new or unusual tasks to other workers.
X	Identify training that is required by, or would be useful for, other workers.
X	Deal with other workers' grievances or complaints.

H. Digital Technology

Typical: 1 to 2	Most Complex: 3
Examples	

Word Processing
- May use word processing software, e.g., self-employed tilesetters use word processing software to write letters and prepare quotations for clients. (2)

Spreadsheet Software
- May use spreadsheets, e.g., use spreadsheets to record and track costs. (2)

Bookkeeping, Billing and Accounting Software
- May use bookkeeping, billing and accounting software, e.g., self-employed tilesetters may use bookkeeping software to input inventories, costs and receivables. (3)

Communication Software
- May use text messaging applications to exchange information with clients and other contractors. (1)
- Use communication software to exchange email with clients, suppliers and contractors. (2)

Internet
- Use the Internet to access supplier websites for information about product specifications and costs. (2)
- May use the Internet to access webinars, training courses and seminars offered by trainers, suppliers and associations. (2)
- May use the Internet to access blogs and web forums where they seek and offer advice about tiling techniques. (2)
- May use the Internet to access online banking services, e.g., self-employed tilesetters check payment details and account balances by accessing websites operated by financial institutions. (2)

Other Digital Technology
- May use electronic office equipment such as printers, scanners, fax machines, copiers and postage meters. (1)
- Use global positioning systems (GPS) to locate travel routes and estimate travel times. (1)
- Use calculators and personal digital assistant (PDA) devices to complete numeracy-related tasks such as calculating material requirements. (1)
- Use digital hand tools, e.g., use a laser level determine low spots on a floor. (1)

I. Continuous Learning
Technical upgrading is offered by manufacturers when new products or equipment are introduced. Provincial construction associations offer safety training courses that tiling companies sponsor tilesetters to attend. Tilesetters may pursue training at community colleges (management training, computer courses) on their own time and at their own expense, although in some cases, the company will pay for upgrading if the tilesetter is being considered for a management position. One of the most practical ways for tilesetters to gain new expertise is "on-the-job" from other more

experienced tilesetters and supervisors.

How Learning Occurs

Learning may be acquired:

√	As part of regular work activity.

√	From co-workers.

√	Through training offered in the workplace.

√	Through reading or other forms of self-study • at work. • on worker's own time. • using materials available through work. • using materials obtained through a professional association or union. • using materials obtained on worker's own initiative.

√	Through off-site training • with costs paid by the worker.

J.   Other Information

In addition to collecting information for this Essential Skills Profile, interviews with job incumbents also covered the following topics.

Physical Aspects

Tilesetters bend and lift tools and tiling materials at work sites using both upper and multiple limb coordination. They kneel, crawl, stand, walk and climb stairs when installing tiling materials. They require hand-eye coordination to cut and place tiling materials. Tilesetters require spatial sense and good vision to ensure patterns are straight and dye lots match. They require heavy strength to lift and carry tool boxes and tiling materials.

Attitudes

Tilesetters should be persistent, responsible and self-disciplined. They should also be conscientious and enjoy working in a detail-oriented occupation. They must have patience, take pride in their work and be willing to be accountable for results. Tilesetters should demonstrate initiative and have strong time management skills. Tilesetters should enjoy working in a sequenced and organized way, and have some artistic/creative aptitude.