



# INCIDENT INVESTIGATION REPORT

Type of occurrence <b>Fall from elevation</b>			
Notice of incident number <b>2022188240006</b>	Incident outcome <b>Fatality (1)</b>	Date of incident <b>May 23, 2022</b>	
Location of incident <b>Warehouse construction site 5255 North Fraser Way Burnaby, B.C.</b>	Primary investigator <b>Danielle GETZIE</b>	Investigation file number <b>FSI-REG-2022-0053</b>	
Approved by manager, OHS Investigations <b>Andreas MENDEL</b>	Signatur	Date <b>September 13, 2023</b>	
PARTIES INVOLVED IN INCIDENT			
Employer	Name <b>Supermétal Construction Inc.</b>	Employer ID <b>91516</b>	Industry classification <b>722005 Steel Frame Erection, Repair, Painting, or Bridge Painting or Cleaning</b>
Worker		<b>Deceased</b>	Occupation <b>Ironworker</b>
Employer	Name <b>Beedie Construction Ltd.</b>	Employer ID <b>795795</b>	Industry classification <b>721028 Industrial, Commercial, Institutional or Highrise Residential General Contracting or Construction</b>

## Persons mentioned in report

Name	Known in the report as	Role in the incident/investigation
[REDACTED]	Worker 1	Ironworker who was employed by Supermétal Construction Inc. (Supermétal). Was fatally injured when he fell from a steel structure.
[REDACTED]	Worker 2	Ironworker employed by Supermétal. Was working near Worker 1 at the time of the incident.
[REDACTED]	Superintendent	Superintendent employed by Supermétal. Was on site [REDACTED] at the time of the incident.
[REDACTED]	Foreman	Foreman employed by Supermétal. Was on site [REDACTED] at the time of the incident.
[REDACTED]	Construction Safety Officer (CSO)	Construction safety officer for Beedie Construction Ltd. Was on site at the time of the incident [REDACTED]

## Scope

This incident investigation report sets out WorkSafeBC's findings with respect to the cause of and contributing factors leading to the workplace incident that occurred on May 23, 2022, at a warehouse construction site located at 5255 North Fraser Way in Burnaby, British Columbia. The purpose of this report is to help employers and workers understand the occupational health and safety (OHS) factors that contributed to the incident so that similar incidents can be prevented in the future.

This investigation report may include some of the enforcement action taken under the *Workers Compensation Act* and the Occupational Health and Safety Regulation in response to the incident and as a result of the investigation. Regulatory compliance activities may be summarized here but will be documented separately.

## How the investigation was conducted

WorkSafeBC's OHS Investigations department conducts health and safety investigations using a systematic approach. This process involves collecting information from various sources to understand the facts and circumstances of the incident and analyzing that information to identify the causal and contributing factors that led to the incident.

The field investigation generally includes the following:

- Securing and examining the incident site, including any equipment involved
- Taking notes and photographs
- Interviewing people with relevant information, such as employer representatives, supervisors, workers, and witnesses
- Collecting documents such as equipment operating manuals, written procedures, and training records
- Conducting tests of materials or equipment, if necessary

The analysis of the information usually includes the following:

- Determining a sequence of events
- Examining significant events for unsafe acts and conditions
- Exploring the contributing factors that made the unsafe act or condition possible
- Identifying health and safety deficiencies

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## Incident synopsis

At a site where a three-level steel-frame warehouse was being built, ironworkers were installing bolts into the beams on the roof of the structure. One of the workers fell 16.8 m (55 ft.) to the ground and was fatally injured.

## 1 Incident details

### 1.1 Firms

Beedie Construction Ltd. (Beedie) is based in Burnaby, B.C. The firm provides construction management and prime contractor services for industrial, commercial, institutional, and high-rise residential projects. Beedie has been in business since 1954 and employs over 300 workers. Beedie was the general contractor for the large-scale warehouse construction project at the incident site. Beedie was also the prime contractor for the project.

Supermétal Construction Inc. (Supermétal), a subsidiary of Canam Group, is a structural steel fabricator and erector based in Quebec. Supermétal designs, fabricates, and erects buildings for commercial, institutional, and industrial projects. Supermétal has been in business since 1959 and employs over 100 workers.

### 1.2 Workers

Worker 1 [REDACTED]  
[REDACTED]

Worker 2 [REDACTED]  
[REDACTED]  
[REDACTED]

The Superintendent [REDACTED]  
[REDACTED]  
[REDACTED]

The Foreman [REDACTED]  
[REDACTED]  
[REDACTED]

The Construction Safety Officer (CSO) had been employed by Beedie [REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]

### 1.3 Sequence of events

Workers at the incident site were working on a three-level, steel-frame warehouse that was at the structural steel framing stage of construction. (See Figure 1).



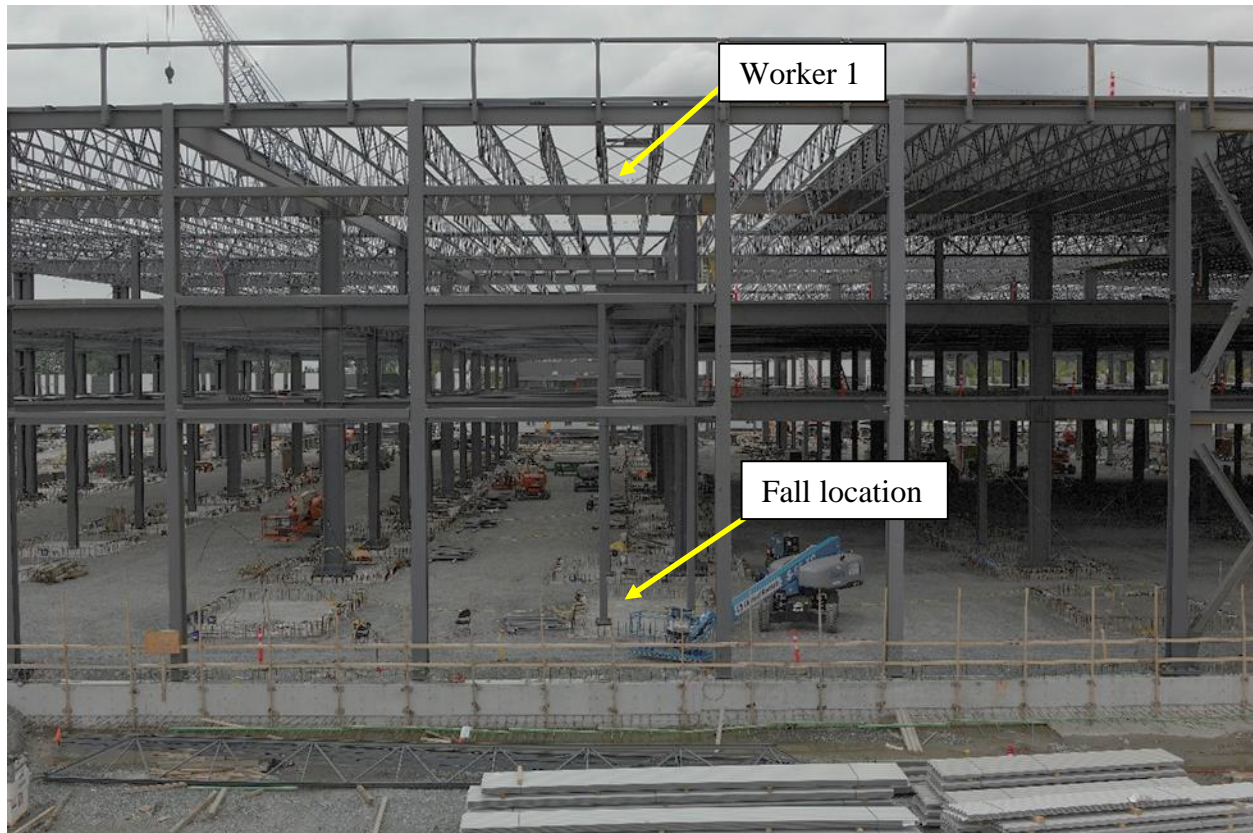
*Figure 1: Aerial view of steel-frame warehouse where incident occurred.*

Because the project was behind schedule, Supermétal workers were operating on the Victoria Day long weekend with a reduced crew of approximately 60 workers, 2 supervisors, and 1 construction safety officer (a Beedie employee). Crews were conducting bolt-up work (installing bolts into the beams) on the structure over the long weekend. Worker 1 and Worker 2 were working on the highest level of the structure (the roof), continuing with tasks from the day before.

A temporary horizontal lifeline system was in place in areas where workers were conducting bolt-up duties. To traverse beams in some places along the length of the lifeline system, workers needed to unclip their lanyards for a short distance and then reattach them to the lifeline. These areas were not navigable by using double lanyards.

The incident was not witnessed, but investigators determined that the following events occurred by conducting interviews and reviewing closed-circuit television (CCTV) video footage from the scene.

At approximately 14:20, Worker 1 was seated on a roof beam approximately 16.8 m (55 ft.) in elevation conducting bolt-up duties. Investigators determined that at this point, Worker 1 was not connected to a fall protection system. Worker 2 was working from a boom-supported elevating lift one bay over from where Worker 1 was working. (See Figure 2).



**Figure 2:** North side of steel structure, showing where Worker 1 was positioned.

At approximately 14:25, Worker 1 transitioned from a seated position to standing. He took three steps on the beam and on the last step, the unprotected worker fell to the surface below.

Worker 2 noticed movement on the ground and then could not see Worker 1 on the beam. Worker 2 realized that Worker 1 had fallen and lowered the boom lift to the ground, then went to Worker 1 to assist him.

Within minutes, multiple workers reacted to the incident by contacting 911, providing Worker 1 with first aid, and securing the scene. Worker 1 sustained fatal injuries.

## **2 Findings**

### **2.1 Fall protection**

#### **2.1.1 Fall protection training**

Worker 1 had general training in fall protection and had completed a site-specific fall awareness quiz. [REDACTED]

#### **2.1.2 Fall protection plan**

The fall protection plan for the site was found to be deficient and was lacking in several regards, including not specifying fall hazards expected in each work area; which protection system to use in each work area; procedures to assemble, maintain, inspect, use, and disassemble each fall protection system; and rescue procedures for a suspended worker.

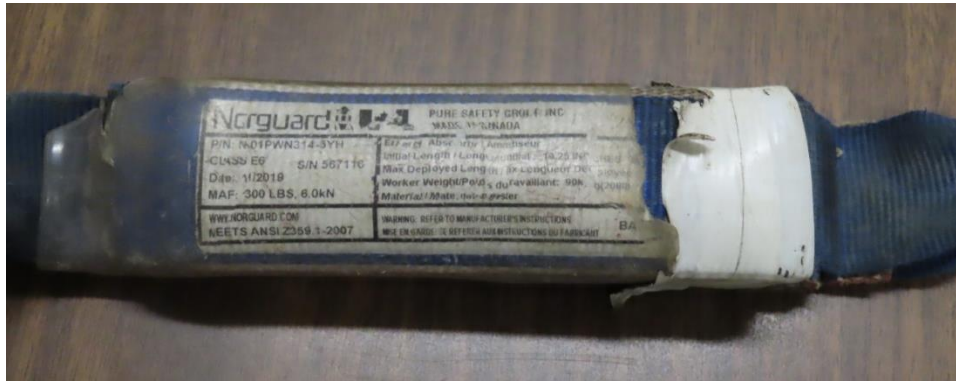
#### **2.1.3 Use of fall protection system**

Worker 1 was wearing a full body harness and shock-absorbing lanyard, but at the time of the incident he did not have his lanyard connected to the horizontal lifeline, and no other form of fall protection was in use. He was not in one of the gap zones where workers had to disconnect from the lifeline (see section 2.1.5 of this report). The investigation could not determine why Worker 1 was not using a fall protection system at the time of the incident.

#### **2.1.4 Personal fall protection equipment**

The shock-absorbing lanyard worn by Worker 1 on the day of the incident was damaged and should have been removed from service. The lanyard was in poor condition and had been taped at the end. (See Figure 3). This was in contravention of the manufacturer's instructions, which required immediate removal from service if defects or damage is found. Supermétal's occupational health and safety (OHS) program required workers to check the condition of their personal protective equipment (PPE) daily; however, Supermétal was also responsible under the Occupational Health and Safety Regulation for ensuring compliance with that provision. The fact that the fall protection equipment was in poor condition was not causal to the incident because Worker 1 was not connected to the lifeline.





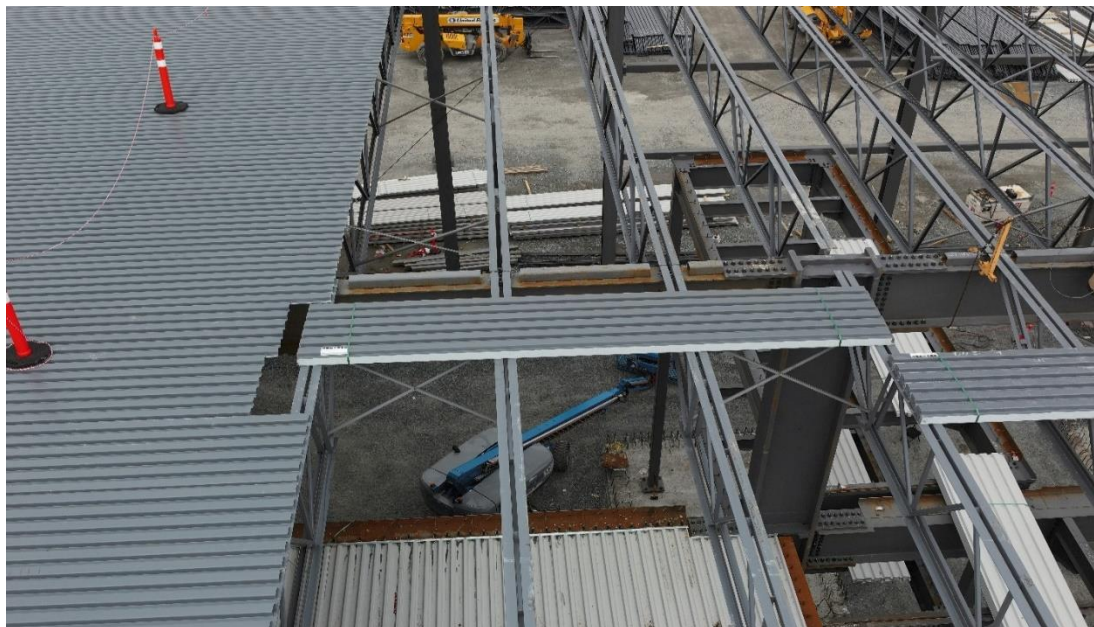
*Figure 3: Damaged shock-absorbing lanyard.*

### 2.1.5 Horizontal lifeline system

A temporary horizontal lifeline system (HLS) was installed in some areas at this worksite.

Supermétal had engineering drawings for the HLS but did not have the manufacturer's instructions or a professional engineer's written instructions for the installation and use of the system.

The investigation identified areas on the roof that did not have a continuous horizontal lifeline for workers to connect to while traversing the beams. These areas consisted of void spaces or gaps where workers had to navigate an area without the ability to use any fall protection. This exposed workers to serious potential risk. (See Figure 4.)



*Figure 4: Void space that exposed workers to potential risk.*

The lack of a continuous lifeline did not contribute to the incident.

## 2.2 Supervision

Worker 1 was not using a fall protection system at the time of the incident and was at a height of approximately 16.8 m (55 ft.).

Supermétal did not provide adequate supervision of a work process that required 100% tie-off and supervision of workers often did not extend to the highest elevations at the worksite to ensure compliance.

On the day of the incident, Beedie and Supermétal relied [REDACTED] to monitor site safety, including in areas that required 100% tie-off. Beedie and Supermétal also often left it up to the workers themselves to adhere to safety procedures and often did not scrutinize the work being carried out on the third level of the structure to ensure compliance. [REDACTED] was responsible for inspecting this area to ensure adherence to fall protection requirements. [REDACTED] on the day of the incident, checks were only conducted partially up the stair tower that led to the upper levels of the structure.

Due to a reduced crew and project delays, Supermétal workers had been requested to work overtime and toolbox talks did not occur on the day of the incident.

There was also a lack of supervision by Supermétal regarding the inspection and maintenance of fall protection equipment and the removal from service of defective items. The workers themselves were responsible for inspecting their fall protection equipment daily; however, the supervisors were responsible for ensuring that the inspections were done. As an example, the shock-absorbing lanyard was visibly damaged, yet was not removed from service, illustrating a lack of oversight and control to ensure worker health and safety.

[REDACTED]

The supervisory failures contributed to the incident.

## 2.3 OHS program

Supermétal had elements of an OHS program that addressed fall protection requirements, including documents noting the need to have in place at a worksite the following provisions:

- Fall protection plan
- Personal fall protection equipment
- Safe work procedure
- Fall protection systems

- Fall arrest and fall restraint
- Temporary horizontal static line
- Foreman's fall protection checklist

However, many of the requirements listed in Supermétal's fall protection documents were not being followed, monitored, or enforced at the site on the day of the incident.

At the time of the incident, Supermétal did not have a joint OHS committee that met regularly and that was made up of employer representatives and worker representatives. No documentation was provided to indicate that such a committee existed, and Supermétal acknowledged that it did not have one.

All the firms with workers at the site had systems for reporting and managing health and safety infractions, yet such infractions were addressed inconsistently. For example, informal warnings, documentation requirements, verbal warnings, and stand-downs had different procedures depending on the firm, which led to inconsistencies in managing health and safety infractions and omissions in reporting them.

Supermétal's failure to ensure that its occupational health and safety program was adhered to contributed to the incident.

## **2.4 Prime contractor responsibilities**

Beedie was both the general contractor and the designated prime contractor for the project.

Beedie hired various subcontractors for the project, including Supermétal. Supermétal was hired to provide steel erection and ironwork.

In its contract with Beedie, Supermétal agreed to ensure it and any of its subcontractors complied with the construction and health and safety legislation applicable to the workplace and with Beedie's safety precautions and programs for the workplace. Supermétal was responsible for ensuring its workers complied with such legislation and with Beedie's requirement in this regard. However, Beedie was also responsible for ensuring that Supermétal and all other subcontractors complied with such legislation and with Beedie's safety precautions for the workplace.

Beedie had a written OHS program and had implemented various health and safety systems on site such as weekly subtrade meetings, dedicated safety officers, review of contractors' OHS materials (e.g., Supermétal's fall protection plan), and daily site inspections.

Beedie had approved Supermétal's fall protection plan, but as mentioned in section 2.1.2 of this report, the investigation found that the plan was deficient. Signage was posted by Beedie in areas requiring 100% tie-off, but the firm did not ensure that these areas were properly monitored or that workers complied with the Regulation.

Beedie's failure to ensure oversight with regard to enforcing fall protection requirements on the worksite contributed to the incident.

## **3 Conclusions**

### **3.1 Cause**

#### **3.1.1 Worker who was not using fall protection system fell from height**

Worker 1 was conducting work activities at height and was not using any means of fall protection. Worker 1 fell about 16.8 m (55 ft.) to the ground. He sustained fatal injuries.

### **3.2 Contributing factors**

#### **3.2.1 Inadequate supervision**

Supermétal did not provide adequate supervision to workers and failed to verify worker compliance with fall protection requirements and reinforce safe work practices. The firm had written fall protection procedures but they were not effectively applied at the worksite.

Supermétal did not have an effective system in place to correct unsafe practices. As a result, unsafe work practices were permitted to develop, such as workers not using fall protection equipment, which exposed workers to the hazard of falls from elevation.

#### **3.2.2 Prime contractor did not fulfill responsibilities**

Beedie failed to ensure the safe coordination of the work activities at the worksite and failed to ensure that the contractors were adhering to the Regulation and the *Workers Compensation Act*.

### **3.3 Other safety issues**

#### **3.3.1 No continuous fall protection system**

The third level of the steel-frame warehouse, where Worker 1 was positioned at the time of the incident, had a horizontal lifeline system in place. However, the system had gaps where workers had to unclip from the lifeline to traverse beams. These deficiencies posed risks to workers on the third level but did not contribute to the incident.

## 4 Health and safety actions

### 4.1 WorkSafeBC

WorkSafeBC generated notice of incident 2022188240006, detailing the facts collected immediately after the incident.

During a post-incident inspection of the workplace, WorkSafeBC identified the following violations of the Regulation by Supermétal. These violations are described in detail in inspection report 202218824079A:

- Section 11.2(1)(a) — Failure to ensure that a fall protection system is used when work is being done at a place from which a fall of 3 m (10 ft.) or more may occur
- Section 11.5 — Failure to ensure that fall protection equipment meets and is used in accordance with an applicable CSA or ANSI standard
- Section 20.4(1) — Failure to provide a suitable work platform for the work activity

During a subsequent post-incident inspection of the workplace, WorkSafeBC identified additional violations of the Regulation by Supermétal. These violations are described in detail in inspection report 202218824087A:

- Section 11.3(1)(a) — Failure to provide an acceptable fall protection plan
- Section 11.7 — Failure to provide the manufacturer's instructions or written instructions of a professional engineer for a temporary horizontal lifeline system

During the investigation, WorkSafeBC also identified the following violations of the Act and the Regulation by Supermétal. These violations are described in detail in inspection report 202319897004A:

- Section 21(2)(e) of the Act — Failure to provide its workers with adequate information, instruction, training, and supervision
- Section 11.2(6) of the Regulation — Failure to ensure that a worker is instructed in the fall protection system for the area and the procedures to be followed

During the investigation, WorkSafeBC also identified the following violations of the Act and the Regulation by Beedie. These violations are described in detail in inspection report 202319897008A:

- Section 24(1)(b) of the Act — Failure as prime contractor of a multiple-employer workplace to do everything that is reasonably practicable to establish and maintain a system or process that will ensure compliance with the OHS provisions