Overview:
- 12th Century Scottish castle protected by Historic Scotland
- Concrete layer covering structural girders in Elphinstone tower flaking, revealing heavy corrosion
- Management specified stripping to bare metal and recoating
- Limited work schedule to accommodate museum days of operation (365 days/year)

Objective:
Blasting and painting without interruption to museum
Restoring Structural Steel Girders in Stirling Castle’s Elphinstone tower

**Substrate:** steel

**Size:** (3) 1.5m (5ft) long by 0.25m (1ft) wide

**Surface Condition:** peeling paint; heavy corrosion

**Specified:**

**Level of Specified Cleanliness:**
SA 2.5 / SSPC SP-10 / NACE 2
Near-White Blast Cleaning

**Profile:** 50-75micron (2-3mil)

**Considered:**

- Garnet and associated dust would take too long to clean, challenging requirement to open next day
- Hand tooling might achieve the required finish, but would have been slow
Restoring Structural Steel Girders in Stirling Castle’s Elphinstone tower
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Reasons for Using Sponge Media:

• Girders to be blasted without damaging nearby concrete/stone
• Blaster could see clearly; didn’t run risk of blasting surroundings
• Low dust properties were essential to clean up within scheduled parameters

Production Rate: three girders took 20 minutes to prepare

Used: Silver 30 Sponge Media™ abrasives, 100-HP Feed Unit™, 35-P Sponge-Jet Recycler™
Restoring Structural Steel Girders in Stirling Castle’s Elphinstone tower

BEFORE

AFTER
Restoring Structural Steel Girders in Stirling Castle’s Elphinstone tower

Result:
• It took just over 2 hours to cleanup area and dismantle scaffolding and containment
• Project completed at a cost that was well within customer budget

Outcome:
• All requirements were covered
• Historic Scotland stated that they would continue to use on similar projects