

Sylmasta AB Case Study

19th Century Cast Iron Pit Wheel Refurbishment

As part of the refurbishment of Mordiford Mill, a waterproof material capable of high strength bonding was needed to sit between the original 19th century cast iron pit wheel and two new steel hoops to be fitted for reinforcement



Damage caused to the original cast iron castings



Sylmasta AB applied to the outer casting of the wheel



Clamps held the steel hoop in place whilst AB cured



Hoop screwed into the wheel to complete repair

Defect

Corrosion and time had weakened the castings of the wheel, which was also cracked in several places. Calculations indicated a future sudden impact would cause the casting to break apart again, possibly irreparably.

To reinforce the wheel, two steel hoops were to be fitted to the outer and inner castings. These could not be welded to the wheel as the cast iron might have exploded during the process due to its age.

There was also a concern that gaps between the hoops and the uneven surface of the wheel would allow water to collect inside, leading to further corrosion of the cast iron.

Solution

To overcome both issues, the Mill owner applied **Sylmasta AB Epoxy Putty** to the inside and outside castings prior to installing the steel hoops.

Sylmasta AB provided a water-resistant layer between the castings and the new hoops to prevent water ingress. It also helped bond the wheel to the hoops, which were held in place by clamps whilst the putty cured before being screwed in.

The two hour work time of Sylmasta AB allowed more putty to be mixed in one go, enabling large sections of the steel hoop to be fitted without the threat of premature curing.

Result

Mordiford Mill last ground flour in 1935. Thanks to the refurbishment of the pit wheel made possible by Sylmasta AB, another step was taken towards it turning once more.