www.zinga.be

KILLYBEGS FISHING PIER
IMMERSED PIER LEGS - IRELAND

The application of ZINGA on the pier legs at Killybegs Harbour was done in the summer of 2000.

The customer, the Irish Department of Marine and Natural Resources, and the contractor, SAR Marine & General, waited a full year before giving any official comment on the performance of the ZINGA coating.
Based on regular controls, they confirmed that the ZINGA is performing very well.
These pictures of the pier legs were taken in August 2001: one year after the application.
The ZINGA is holding perfectly with no rust showing. Any marking on the legs is either seaweed or harbour contaminants.

System:

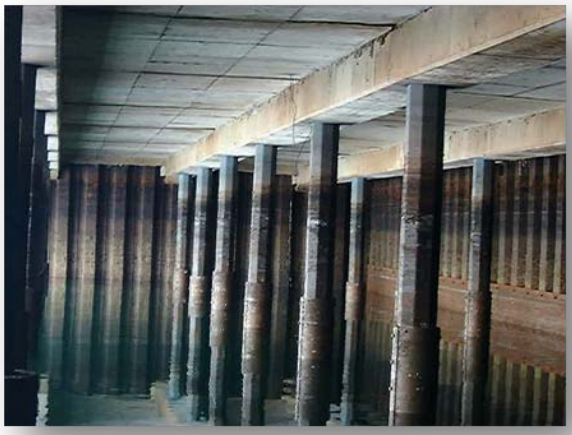
ZINGA 1 x 25 µm + 3 x 40 µm

The fishing pier, which supports the factory buildings, is held up by 309 mild-steel hexagonal shaped legs, all approx. 600 mm in diameter.

These pier legs have been in the sea for 25 years and due to the salt and the sulphate reducing bacteria present in the sea water, they were losing up to 2 mm per year of their thickness. The waters around Killybegs are unique because they have the highest rate of corrosion in Europe.

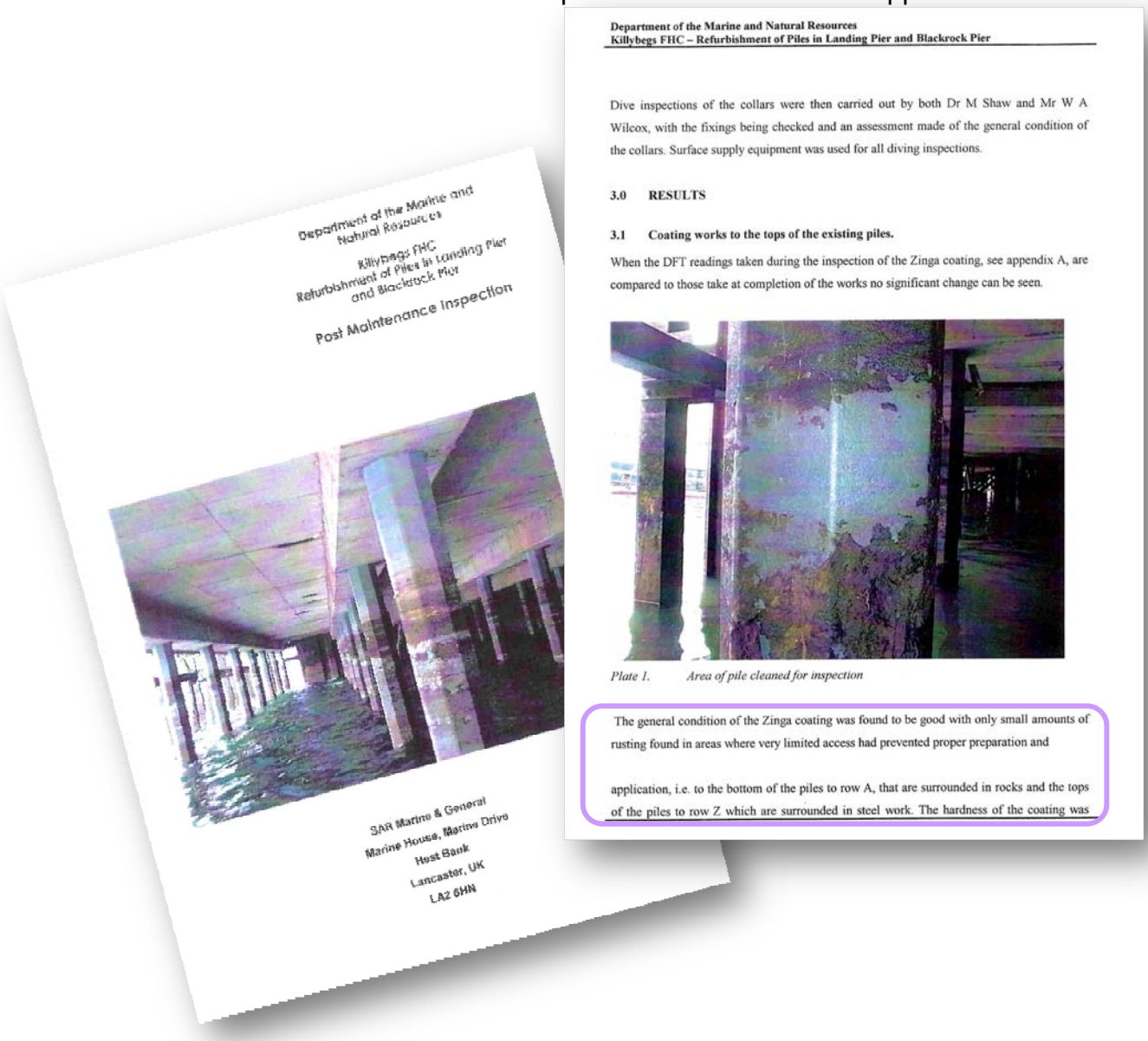
The height from the concrete deck to the water level at low tide is approx. 3 to 4 meter. At high tide, 1,5 to 2 meter of each pile is totally submersed in seawater.

The piles were prepared by UHP water-jetting and blasting to SA 2.5 with Rz 40 to 60 µm.
The application happened under severe surveillance of SGS Axa-Med, because it was a very difficult and delicate application as they had to take into account the tidal movement of the water and the constant contact with sea water. SGS Axa-Med had prescribed a dry film thickness of ZINGA of 25 + 40 + 40 + 40 µm = 145 µm, but in the end an average of 300 µm was measured.



An adhesion test by SGS Axa-Med, performed in August 2000 gave an average result of 3.5 N/mm², which is very good.

Hereafter you will find an extract from the final inspection report, issued by SAR Marine & General for the Department of the Marine and Natural Resources, dated 15/06/01, that describes the excellent condition of the piles 12 months after the application.



Department of the Marine and Natural Resources

Killybegs FHC
Refurbishment of Piles in Landing Pier and Blackrock Pier

Post Maintenance Inspection

SAR Marine & General
Marine House, Marine Drive
Heat Bank
Lancaster, UK
LA2 6HN

Department of the Marine and Natural Resources
Killybegs FHC – Refurbishment of Piles in Landing Pier and Blackrock Pier

Dive inspections of the collars were then carried out by both Dr M Shaw and Mr W A Wilcox, with the fixings being checked and an assessment made of the general condition of the collars. Surface supply equipment was used for all diving inspections.

3.0 RESULTS

3.1 Coating works to the tops of the existing piles.

When the DFT readings taken during the inspection of the Zinga coating, see appendix A, are compared to those take at completion of the works no significant change can be seen.

Plate 1. Area of pile cleaned for inspection

The general condition of the Zinga coating was found to be good with only small amounts of rusting found in areas where very limited access had prevented proper preparation and application, i.e. to the bottom of the piles to row A, that are surrounded in rocks and the tops of the piles to row Z which are surrounded in steel work. The hardness of the coating was

In July 2003 SGS Axa-Med has done the first official inspection of the pier legs after 3 years of service. There was no significant change in the layer thickness of the ZINGA. Some minor repair work had to be done on piles that had received an insufficient surface preparation at the time of the application on areas that were difficult to reach. Hereafter you can read an extract of the inspection report and view the pictures that were taken.

SGS

REPORT

Mr. JOHN CAMPBELL
DEPARTMENT OF THE MARINE AND
NATURAL RESSOURCES
Upper Main Street
BALLYSHANNON, CO. DONEGAL
IRELAND

Date:	Our reference:	Your reference:
14/08/2003	**1127-N-1519-2003**	AFIP ref. 086-B-2000 dd. 11/07/00

Type of intervention	INSPECTION
Object	Piles of Landing Pier and Blackrock Pier
Location	Killybegs Harbour, Ireland
Date inspection	14/07/2003
Re-inspection	First inspection after 3 years of service.

Brief conclusion	See paragraph
Some minor repair work has to be done on piles with areas difficult to reach. The cleaning of the reference piles with HP (warm) water didn't give any problem. The all-over dry film thickness hasn't change significantly.	

In July 2006, a second inspection took place, 6 years after the application and 3 years after the first inspection. The results are again promising.

SGS

REPORT

Mr. John Campbell
Department of the Marine & Natural Resources
Upper Main Street
BALLYSHANNON CO. DONEGAL
IRELAND

Date:	Our reference:	Your reference:
02/08/2006	**1127-N-0047-2006**	AFIP ref. 086-B-2000 dd. 11/07/2000

Type of intervention	**3-YEARLY INSPECTION**
Object	Piles of Landing Pier and Blackrock Pier
Location	Killybegs Harbour, Ireland
Date inspection	15/07/2006
Re-inspection	Second inspection after 6 years of service

Brief conclusion	See paragraph
The piles do not show any significant changes although the repair works after 3 years have just started recently. Only on some piles we find some corrosion on the upper 0,5 till 1 m. Touch-up is going on. The cleaning of the piles with nylon brushes and water doesn't cause any problem. The all-over dry film thickness has increased with another 11%.	

In July 2009, a third inspection took place, 9 years after the application and the results are very good. ZINGA protects the metal of the pier piles very well, even in these very harsh conditions.

This is a short conclusion from the 2009 inspection report:

Brief conclusion.
The piles didn't show any significant progress in corrosion since the last inspection in 2006 (after 6 years in service). Only on the piles at the Blackrock Pier we saw slight corrosion on the upper 0.5 to 1 m.
The touch-up done before and during the last inspection in 2006 shows some blistering. This is probably caused by remaining salts underneath. The overall thickness has not significantly changed.

An extract of the report:

The coating is at present in quite good condition; if well maintained, the system can remain in service for another 10 years.