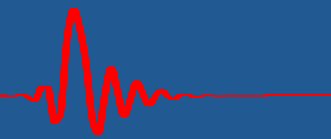


Aster Power Coating®

protecting lives from earthquakes



Global Problem

Around 1 in 6 people around the world live in buildings that use masonry (brick, CHB, etc.). It is estimated that over 75% of the deaths caused during an earthquake in the past have been due to collapse of masonry walls. This is an important global problem that needs to be solved.

Masonry failure during past EQ



Nepal 2015



Italy 2016



Indonesia 2018



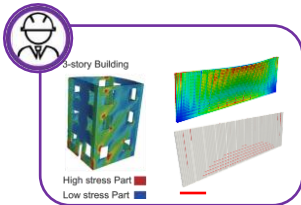
Morocco 2023



Turkey/Syria '23

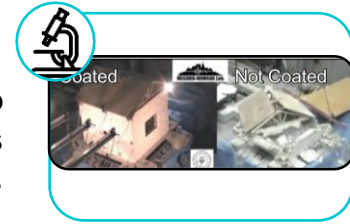
Aster's Strength

At Aster, we have developed a seismic retrofitting solution, Aster Power Coating® to solve this global problem. It is an **innovative wall coating** which increases wall's surface strength, **water resistance & crack resistance**



Aster has the analytical capability to perform numerical analysis of the buildings using our Aster Power Coating® to calculate **bespoke coating** requirement and **reduce cost**

Aster Power Coating® has been researched at the **University of Tokyo** for its impact on the seismic performance on masonry, through various kinds of structural experimentation.



Reduce up to 50% of cement in your concrete hollow block walls (CHB) using Aster Power Coating®. In addition to cost reduction, it also enables **reducing the overall construction carbon footprint**

Aster was awarded the "Construction International Award" by the Ministry of Land Infrastructure and Tourism (MLIT) of Japan in September 2024.



Aster Power Coating®

WHAT

Glass fibre reinforced water-based, **water resistive** coating

WHY

Improve seismic performance and structural integrity of masonry buildings
Maintenance of old RC buildings, prevent deterioration & increase life span

HOW

Ordinary **Paint Roller / Trowel** from local hardware shop
Amount of coating based on numerical analysis and structural design

Line-up

- (i) Seismic Retrofitting – prevent collapse of masonry walls during EQ
- (ii) Wall Maintenance – prevent concrete spalling and increase life span

WHO

Normal Masons – No special craftsmanship required.



Aster Power Coating® Line-up

Grade	HARD	SOFT
Purpose	Enhancement of tensile strength of masonry walls	Prevention of cracking, spalling, and delamination
Application Area /can	7-12 m ²	10 - 20 m ²
Application Method	Like Putty	Like wall painting (Roller)
Characteristic	Water-based coating, Low VOC Emissions	
Net Weight /can	16kg ± 3%	
Waterproof (conforming to)	JIS-A-6909 (Japan domestic standard)	
Appearance	White	
Recommended use	As intermediate coating (usage of top-coat recommended)	
Suitable application	Interior and exterior walls. Preferably both sides.	



Application Examples

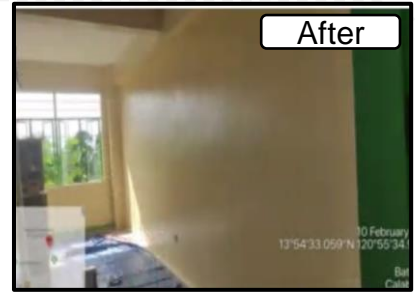
Seismic retrofitting of CHB walls in a school building in the Philippines



Before



Application - Trowel



After

- Retrofitted 2 schools, designated by DPWH, as a part of a school retrofitting ODA project funded by JICA
- Images above are of Apacay Elementary School Taal, Batangas. Existing wall were damaged by earthquake
- Aster Power Coating® applied using trowel. Retrofitting done based on experimental and numerical studies
- Magnitude 6.3 (Intensity 5) EQ occurred 2 months after coating (15th June 2023). No damage/cracks in wall

Seismic retrofitting of brick masonry walls in Taiwan

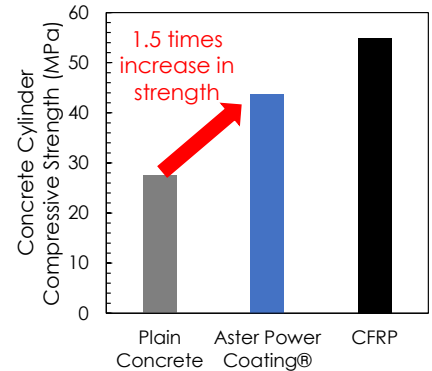
Experiment



Certification from Taiwan Accreditation Foundation



Agreement to use in public projects



Strengthening/ Maintenance of reinforced concrete overpass in Japan



Before



Application Paint Roller



After

- Structural maintenance / strengthening
- Prevention of concrete spalling and crack propagation
- Paint roller



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