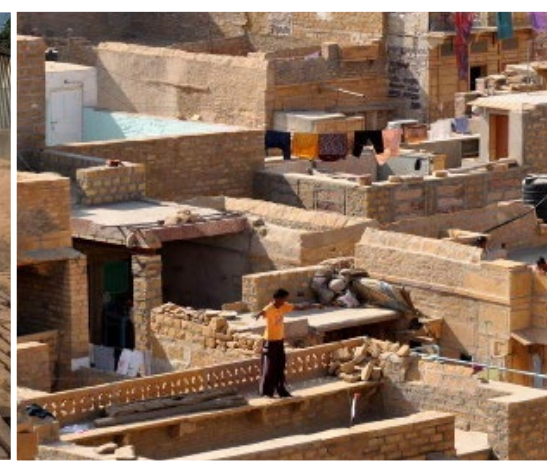


Aster
For
No disaster



Aster Co., Ltd.



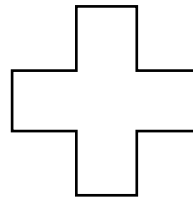


MASONRY

Masonry structure is made of small units like bricks, stones, and concrete blocks, piled up and connected with mortar.



- **Bricks**
- **Stones**
- **Concrete Blocks**



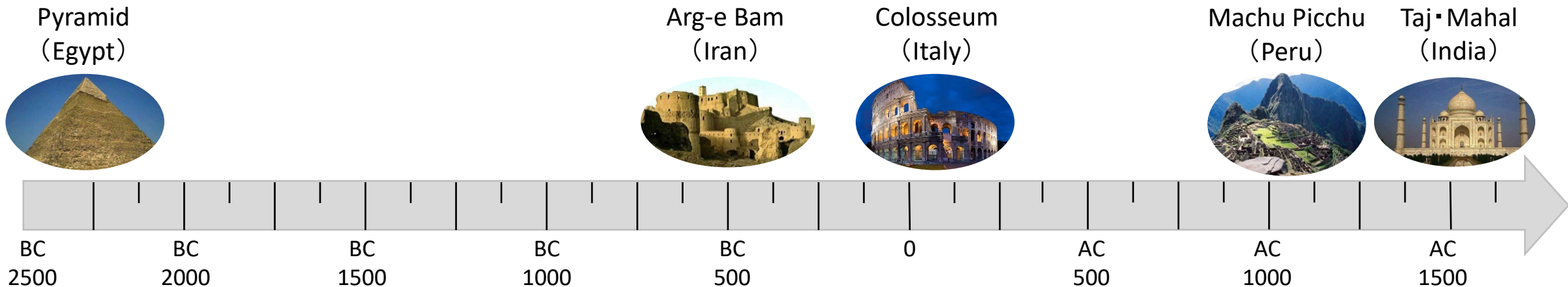
Mortar

- **Cement**
- **Lime**
- **Gypsum**
- **Mud**

Oldest manufactured product

MASONRY

Masonry structure is the oldest manufactured product for the building, and the history starts before BC 2500 like a pyramid in Egypt.





India



Columbia



Greece



Philippines



Canada



Turkey

MASONRY

Widely used construction material

Masonry structure is still the most popular building in the world and 60% of the population uses this structure because the material is available all over the world and is durable, and the living environment is quite good regarding its thermal insulation and soundproofing.



Taiwan



Indonesia



India 2001



Italy 2016



Philippines 2017

MASONRY



Indonesia

However, most of these masonry structures are highly vulnerable to earthquakes. Its collapse is very fast and the material is heavy and torn into small pieces, which human can easily lose his life.



Morocco 2023



Myanmar, Mandalay EQ(2025)

Mandalay, Reconstruction



Our Solution – Aster Power Coating®



Aster Power Coating®

WHAT

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

WHY

Masonry – **Strengthen** walls against **earthquakes**

Concrete / Masonry – Maintenance / **Prevent cracking**

WHERE

Masonry Walls of **New** and **Existing** buildings

HOW

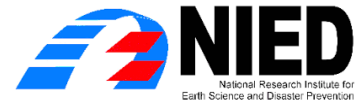
Ordinary **Paint Roller** / Trowel

WHOM

Normal Masons – No special craftsmanship required



Impact of Aster Power Coating®



Experimental validation of a full-scale CHB wall at the 2nd largest in the world Shake table on Jan 2022 using CHB blocks from the Philippines funded by JICA with the support of NIED as a part of the accreditation scheme of DPWH Philippines. Minimal damage was observed in the wall coated with Aster Power Coating® even when the wall was subjected multiple JMA intensity 6+ intense shaking (1995 Kobe earthquake).

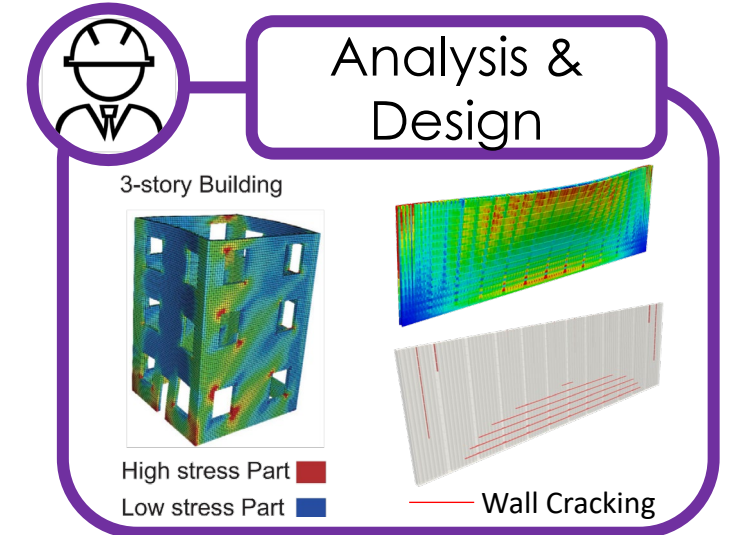
Aster Power Coating® Line-up



Grade	HARD	SOFT
Purpose	Seismic Reinforcement of masonry walls in addition to anti-crack, water resistive and long-lasting walls.	Maintenance of Concrete surfaces anti crack/spalling & improved water resistance
Glass fibre content	Great	Normal
Texture	Like Putty	Like Elastomeric Paint
Application Tool	Trowel	Paint Roller / Brush
Application Area /can	8~12m ²	10~20m ²
Characteristic	Water-based coating. Very low VOC Emission (F☆☆☆☆ rating)	
Net Weight /can	16kg ± 3% packed in reusable plastic cans	
Waterproof (conforming to)	JIS-A-6909 (Japan domestic standard)	
Colour	Default White. Any colour possible for large orders	
Recommended use	As intermediate coating (usage of top-coat recommended)	
Suitable application	Interior and exterior walls. Preferably both sides.	



Aster's Strength



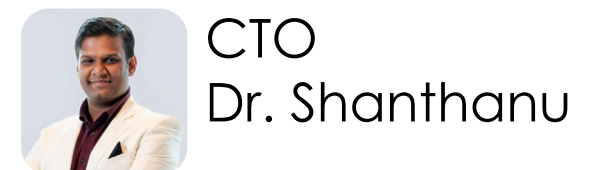
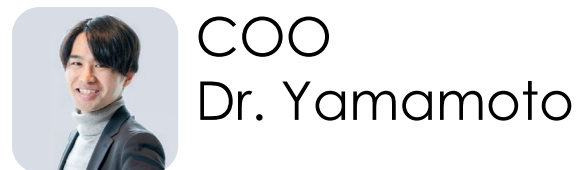
★ Bespoke Coating Solution

Change our product formulation to suit client's need (eg. waterproofing, strengthening etc.)

★ Earthquake Engineering Expertise

Calculate the coating requirement (location and thickness) based on target EQ risk and budget

★ Team

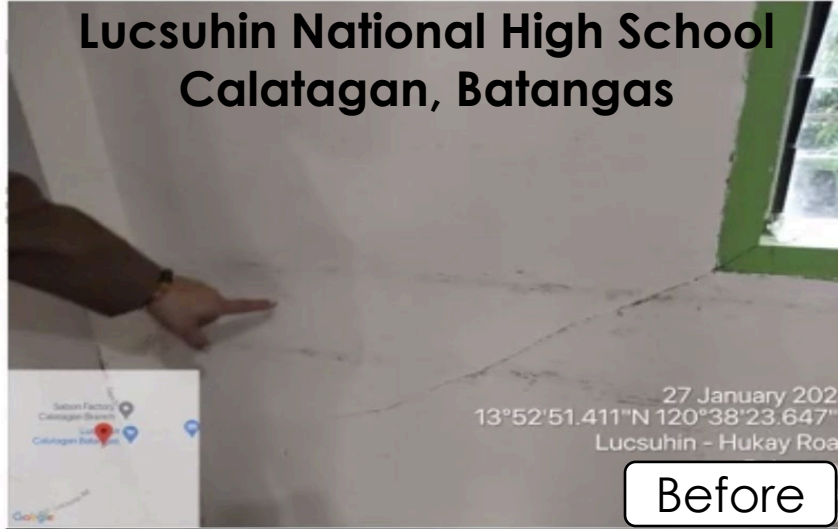


Application Example: Wall strengthening in Japan - Kochi

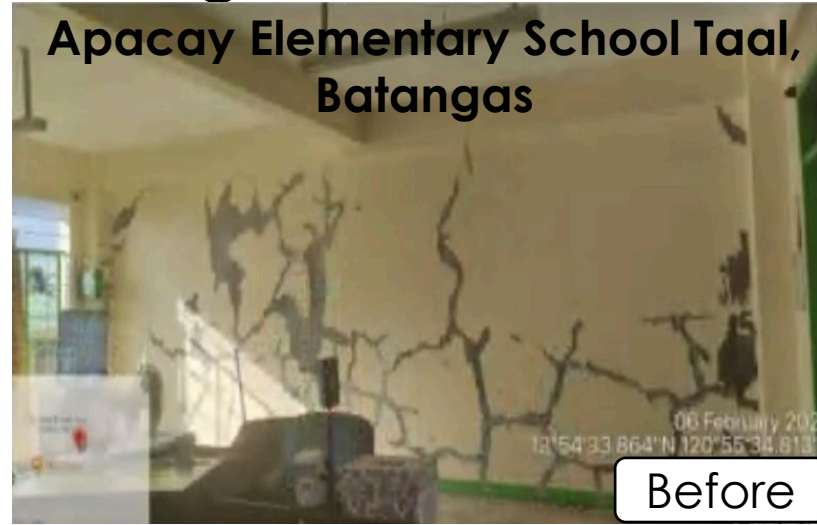


Application Example: Seismic Retrofitting of School in the Philippines

Lucsuhin National High School
Calatagan, Batangas



Apacay Elementary School Taal,
Batangas



Magnitude 6.3 (MMI Intensity 5)
Earthquake occurred 2 months after
coating the school (15th June 2023).
No damage/cracks in wall



News paper coverage by Manila Shinbun

15 年) 1 月 30 日 (月曜日)

日 刊

新 聞 日 本

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☎ (02) 8802-5858
<http://www.yakult.com.ph/>

記事紹介

【エコトレンド】DMC I とユニバ
ンクが提携へ PS E 総合株価指数銘柄
の充電価格引き上げ請求を却下 サン
ミゲルの申立てを控訴裁 (2 面) 「遊
るだけ」で校舎耐震化 JICA パイ
ロット事業開始 (2 面 = 写真)

【JETRO 比経展 29】製造
業を巡るフィリピンと比較優位性
について (3 面) ウクライナへ戦時
給付と戦車に続き、紛争激化懸念
欧米諸国 (4 面) スタンダード移行も
選択放 フライム企業、上場維持へ奔
走 東証再編 (5 面) インフル、全
国拡大顕著 流行 1 カ月、「注意報」目
前 専門家「ワクチン接種を」(6 面)
岩瀬の切腹 又ゲームズ (7 面)

敗れども
死なず

今週の特
点

今週の
注目記事

Making school buildings earthquake-resistant just by painting Start-up and pilot project from the University of Tokyo JICA | "Daily Manila Shimbun" Web The Daily Manila Shimbun Web (www.manila-shimbun.com.translate.goog)

Application Example: Seismic Retrofitting/ Crack Prevention of New Housing in the Philippines



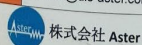


Adopted in all 100 houses in Palo City project. Planned to continue adoption in future projects.

Aster Power Coating will be used to turn one master bedroom into a safe room (panic room), minimizing cost increases while protecting lives.

On the other hand, many concerns of new construction developers in Asia are that cracks and leaks occur within about a month of construction, resulting in repair costs. Our materials have been applied and have shown to prevent any cracks from forming, so they are being used in anticipation of their effectiveness in normal use as well.

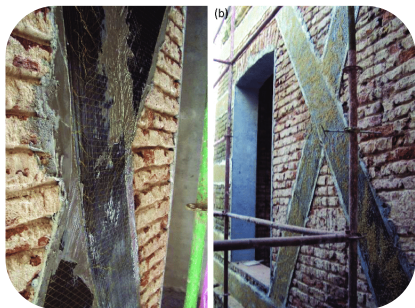
Aster Power Coating® for Maintenance	
Product Name	Aster Power Coating® for Seismic Reinforcement
Main Ingredient	Water based acrylic emulsion coating
Function	Thick coating material (putty) for wall reinforcement
U.S. Code	3214.90
Weight	16.0kg(±3%) (net), 17.57kg(±3%)(gross)
Packing size	Height 39cm, Diameter 34cm
Manufacture date	2024-10-29
Packing date	2025-01-27
Serial no.	JPN11M24AC241029R0015
Flammability	Non-Flammable
Toxicity	N/A
Country of origin	Made in Japan
Company Name	Aster Co. Ltd.
Address	825-3, Oka-issiki, Numazu, Shizuoka
Telephone	+81-(0)55-943-6795
Email	contact@dis-aster.com





Application Example: Retrofitting Buildings in Taiwan

Old Method Carbon Fiber Sheet (CFRP)



- Expensive
- Special skills required to apply
- Adhesion problems
- Makes wall too strong that structural redesign is required

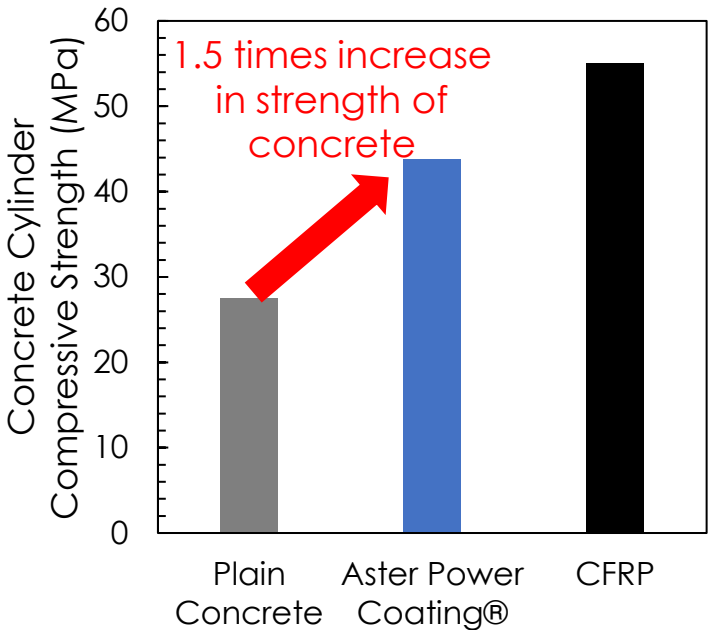


New Method Aster Power Coating®



- Cheaper (1/5th CFRP price)
- Easy to apply
- Good adhesion
- Structural redesign after application is not required

Concrete Cylinder Compression Test Results at the Taiwan Accreditation Foundation (TAF) (May 2024)



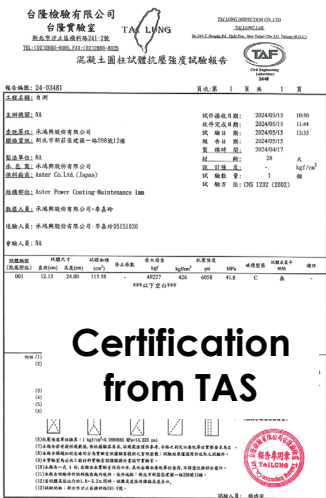
- 28 days drying period for materials
- 1 coat of CFRP (200g/m²)
- 1mm thickness of Aster Power Coating®
- CFRP strength increase is 2 times that of plain concrete
- The failure mode for CFRP is usually brittle (sudden) whereas it is ductile (flexible) for Aster Power Coating®. This flexibility and residual strength capacity is crucial during earthquakes.



Coated Specimens



Testing Apparatus



RESULT:

- There is increase in strength (1.5 times) due to Aster Power Coating®
- Although, CFRP is stronger, is it expensive (5times)
- Based on this TAF approved data, Aster Power Coating® is planned to be deployed on a large scale to prevent spalling of concrete and mortar walls and as a post-earthquake earthquake repair measure.

Case Studies 1

① Market Ceiling (Taiwan)

Repairing cracks and spalling on market ceiling

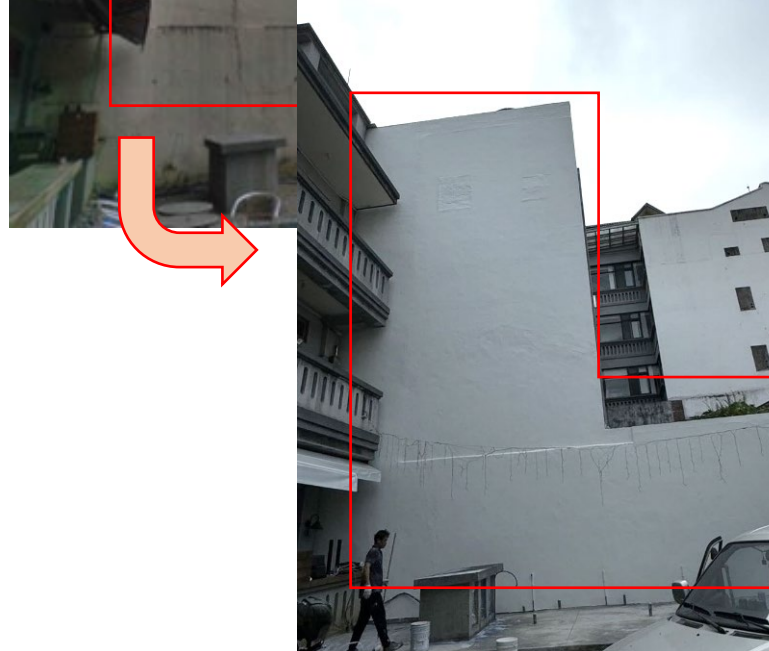
Dec 2024, Soft



② Building wall (Taiwan)

Repairing cracks and spalling on building wall

Dec 2024, Soft, Thickness: 1-1.25mm (wet)



③ Apartment Repair (Taiwan)

Repairing cracks and spalling in apartment rooms

Dec 2024, Soft, Thickness: 0.75mm (wet)



Case Studies 2

④ New public housing (Philippines)

Incorporating a panic room in new public housing

Feb 2025, Soft, Thickness: 0.89mm (wet)



⑤ Pedestrian Bridge (Taiwan)

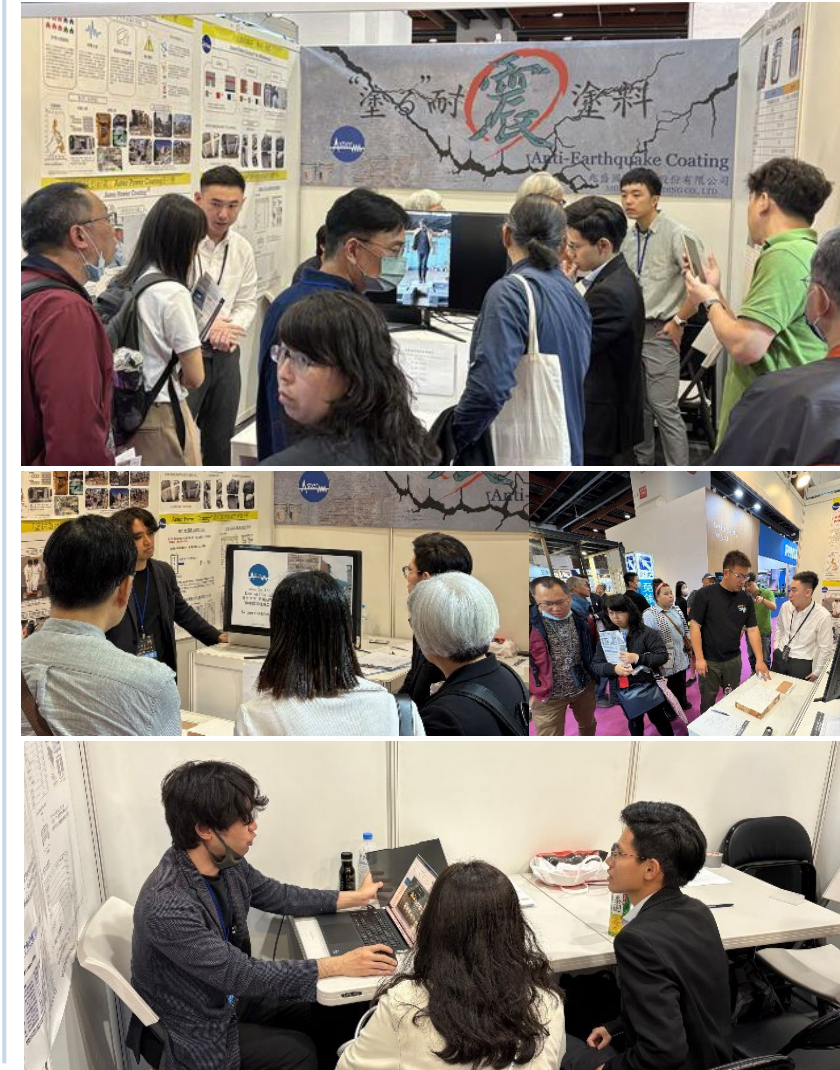
Repairing cracks and spalling on RC bridge

Feb 2025, Soft, Thickness: 1mm (wet)



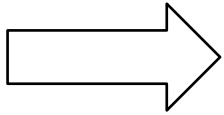
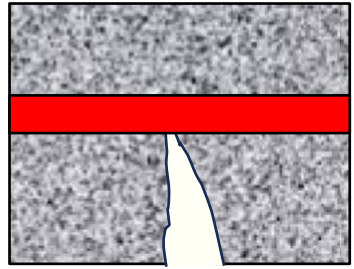
⑥ Exhibition (Taiwan)

Apr 2025, Exhibit at the Taipei Building Materials Expo

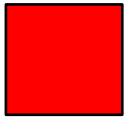


Aster Power Coating®

Concrete



Concrete



Steel Rod

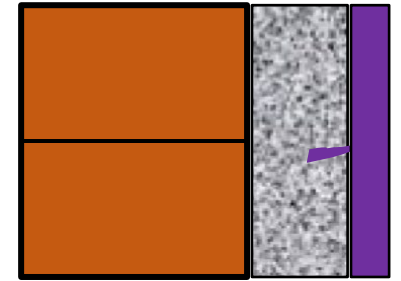
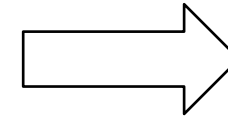
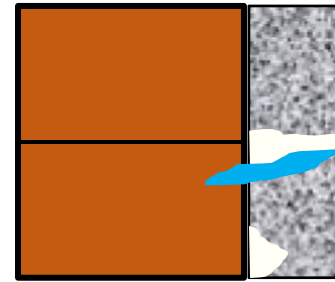


Aster Power Coating®

1. Increase concrete surface strength and prevent cracks
2. Prevent cover concrete spalling and steel exposure

SOFT - for Maintenance

Masonry



Masonry Wall



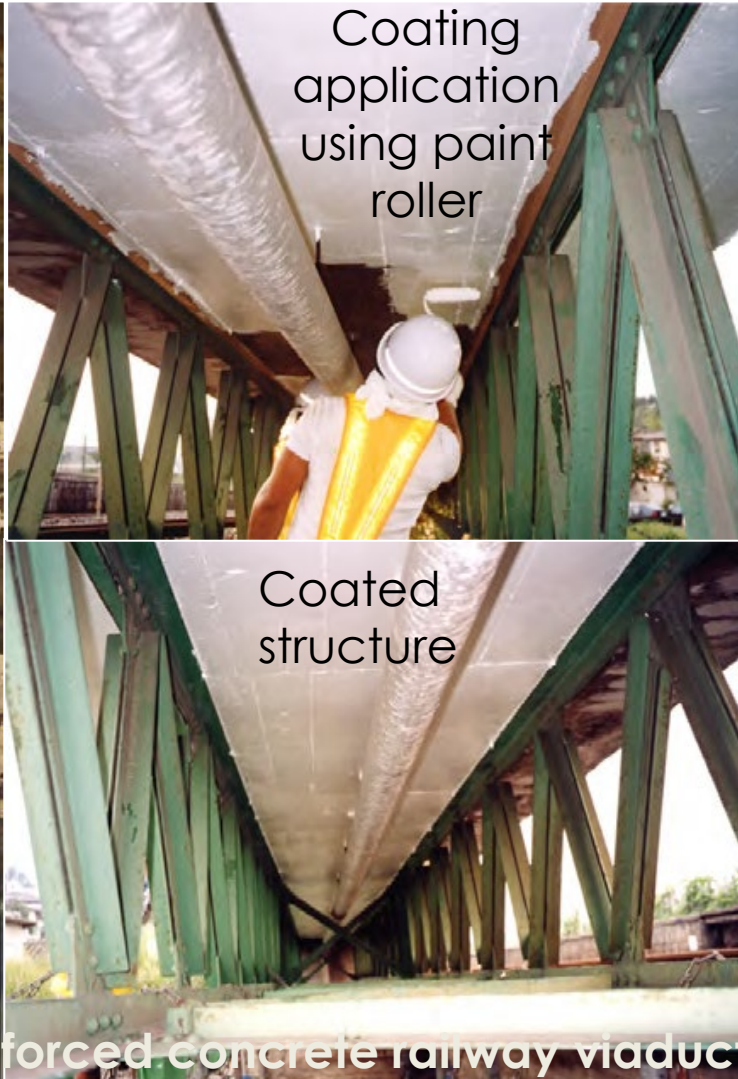
Mortar



Aster Power Coating®

1. Increase masonry/mortar surface strength and prevent cracks
2. Prevent water penetration during heavy rain

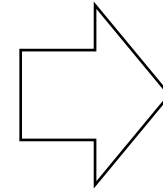
Application Example: Maintenance of Railway Bridge in Japan



Application Example: Maintenance of university building in Numazu, Japan



Application Example: Maintenance of Residential Building in Okinawa, Japan



Thank you

Simple workmanship

Flexibility in changing room layout

Good **thermal** and **acoustic** performance

Reduction in construction **resource**

Good earthquake performance

Easier to waterproof floors

CO₂ Reduction

Contact us at
kurihara.t@itochu.co.th
contact@dis-aster.com

