

# Zero Damage & Preventive Care

PERI Formwork & Scaffolding (Thailand) Ltd.





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PERI Formwork & Scaffolding (Thailand) Ltd.

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**Important Notes:**

Without exception, all current safety regulations must be observed in those countries where our products are used.

The illustrations in this brochure are photographs of real site situations. Safety or formwork anchor details are therefore not to be taken as a definitive guide to the way the equipment is to be used.

Safety precautions and allowable loads are to be strictly observed at all times. Separate structural calculations are required for any deviations from the standard design data.

The information contained herein is subject to technical changes in the interests of progress.

## Content

1. What is Zero Damage?
2. Benefit of Zero Damage
4. Reason for Zero Damage
6. Road map to Zero Damage
7. How to use PERI material
14. Common damages on site
16. Examples of extra cleaning / Charges
18. References

## What is Zero Damage?



- **A concept aiming for the correct handling of PERI formwork and scaffolding to:**
  - ✓ Reduce loss of components
  - ✓ Reduce material damage claims
  - ✓ Increase efficiency, productivity and safety on site
  - ✓ Reduce cleaning and repair charges
  - ✓ Increase loading capacity and save on freight costs
- **It targets PERI rental , buy-back or sold material**
- **All processes that include material handling will be improved**
- **Shorten the negotiation period during the conclusion / closing of a project**
- **Improvement of the relationships with business partners.**

## Benefits of Zero Damage



### ■ Close relationship between PERI and Customer/Contractor

- High service level
- Efficient organization of logistics
- Less negotiation about material damaged



**Reliable  
Partnership**

### ■ Large savings potential for customer

- Less cleaning and repair charges
- Reduction in scrap material
- Improved profitability of a project
- Improved site operations
- Higher safety level
- No additional unloading costs



**Improved  
project  
profitability**

## Benefits of Zero Damage

### ■ Benefits for PERI & Customer

- Reducing claims for repairs and DBR (damage beyond repair) / scrap material
  - ✓ Customers are often not willing to pay for these charges or only after huge discounts
  - ✓ Negotiations are spoiling the customer relationship as they feel that PERI is trying to make a profit out of these charges
- Increasing the amount of available material in the rental park, as less material needs to be scrapped
- Reducing the effort for material inspections after rental material is returned
- Reducing the amount of material repairs
- Improving the image of PERI as a partner



**Financial benefit  
for PERI and  
Customer**



**Improve Stockyard  
Operation and fast  
response**



**Customer  
relationship**

## Reason for Zero Damage



### Try to avoid:

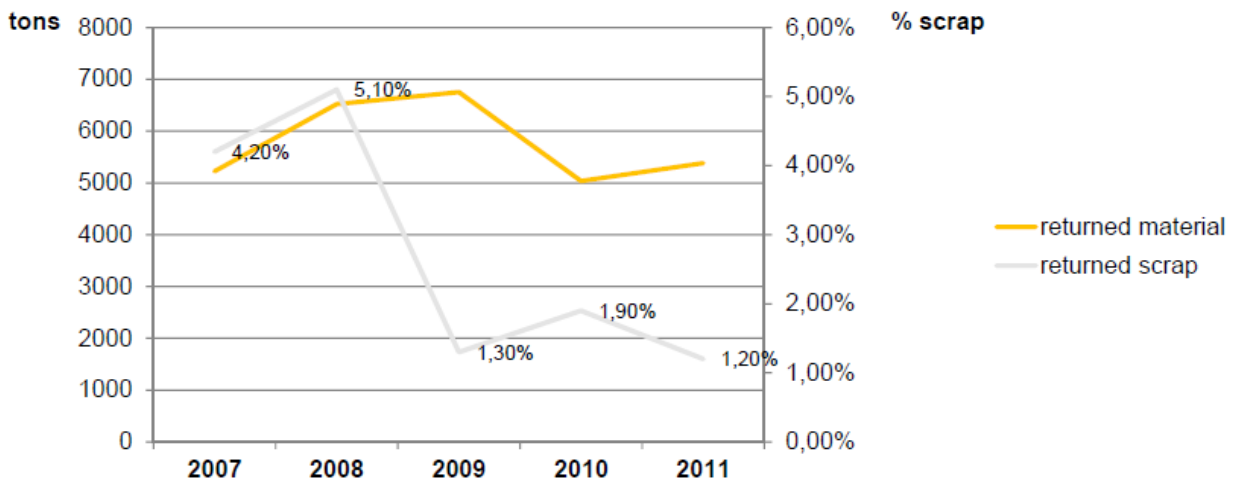
- High cost of damaged material (3-5%)
- High Cost of cleaning & Repair (5-10%)
- High amount of material re-investment
- Spoils customer relationship, as they feel cheated when presenting the costs of damages
- Millions worth of PERI material at customer, without proper monitoring
- Lack of awareness of site staff about proper material segregation
- Group Directive prohibits handing out of scrap material to customers



## Background & success of Zero Damage



- **Concept was developed by PERI subsidiaries in South America**
- **Campaign was highly successful**





# Road map to Zero Damage



**1** Kick-off meeting before start of job  
(Presentation to project management)

**2** Induction to workers at site  
with information material



**3** Product training

**4** Frequent supervision during  
course of project



**5** Improved quality of returned  
material

# How to use PERI material



The following illustrations show:



Correct use of PERI materials



Incorrect use of PERI materials



Result of incorrect use



With our "Zero Damage" campaign, we would like to highlight the advantages resulting from the correct use of PERI materials. This brochure is part of the campaign.



**Zero Damage  
Quality Maintenance**

# How to use PERI material



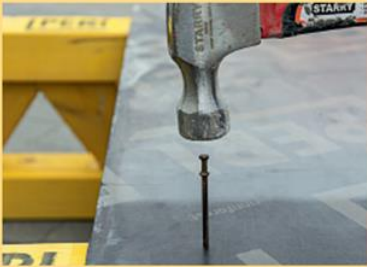
Correct use of PERI materials



Incorrect use of PERI materials



Result of incorrect use



Always use nails of the appropriate size, and hammer in nails straight



Do not use nails that are too long, and do not hammer in at an angle



Result: large spalling of the girder = high costs incurred for damage repair or replacement



Only use girders of standard lengths



Do not shorten the girder depending on needs



Result: girders with any shortened length = high costs incurred for replacement



Always lower the prop before striking, and remove only after releasing the nut



Do not hit the prop with the hammer, or let the prop fall to the ground



Result: props with dents and kinks = high costs incurred for damage repair or replacement





# How to use PERI material



Correct use of PERI materials



Incorrect use of PERI materials



Result of incorrect use



Before shuttering, apply PERI Clean to the formlining before each use



Never work without PERI Clean



Result: heavily soiled formlining  
= high costs incurred for replacement



Carefully remove the panel formwork after the concrete has hardened using suitable equipment



Do not strike panel formwork by means of a tie rod or other objects



Result: damaged frames  
= high costs incurred for replacement



Always insert frames on top of each other by hand



Do not use a hammer to carry out assembly



Result: damaged materials  
= high costs incurred for damage repair or replacement



# How to use PERI material



Correct use of PERI materials



Incorrect use of PERI materials



Result of incorrect use

## Lifting accessories



Only move panel formwork using the appropriate lifting gear and hooks



Do not lift the panel formwork unevenly or without hooks



Result: damaged corners and frames caused by dropping = high costs incurred for replacement



## Packaging/Handling on site



Only store small components in crane pallets



Do not use crate pallets as a work surface or for storing waste



Result: damaged crate pallets = high costs incurred for damage repair or replacement



## Packing / Storage



Always store the panel formwork with the formlining facing upwards and use timber supports



Do not lay the formlining directly on the ground



Result: damaged formlining = high costs for replacement





# How to use PERI material



Correct use of PERI materials




Incorrect use of PERI materials





Result of incorrect use

**Cleaning**



Clean the scaffolding materials with a scraper before returning them

- Cleaning excess concrete reduce extra charges


Do not return any scaffolding materials that have not been cleaned beforehand




Result: dirty materials = high cleaning costs





**Cleaning**




Remove excess concrete immediately after concreting by means of a high-pressure cleaner


- Cleaning excess concrete reduce extra charges


Do not allow any excess concrete to harden on the formwork

Result: very dirty materials = high cleaning costs




**Cleaning**




Clean the girders with a scraper before returning them


- Cleaning excess concrete reduce extra charges




Do not return any girders that have not been cleaned beforehand

Result: dirty girders = high cleaning costs



# How to use PERI material

## Packaging/Handling on site



- Formwork production will be even faster if there is order on site and as less crane lifts as possible
- Allows easier control of materials and will reduce damage and losses

## Packing / Storage





# How to use PERI material

## Packing / Storage



## Packing / Storage





# Common damages on site

## Site observations / Common damages



- Panels released by excess force
- Plywood damaged
- Release agent was not used



- Caused by hammering & throwing



- Caused by drilling



- Caused by screws and wrong nailing

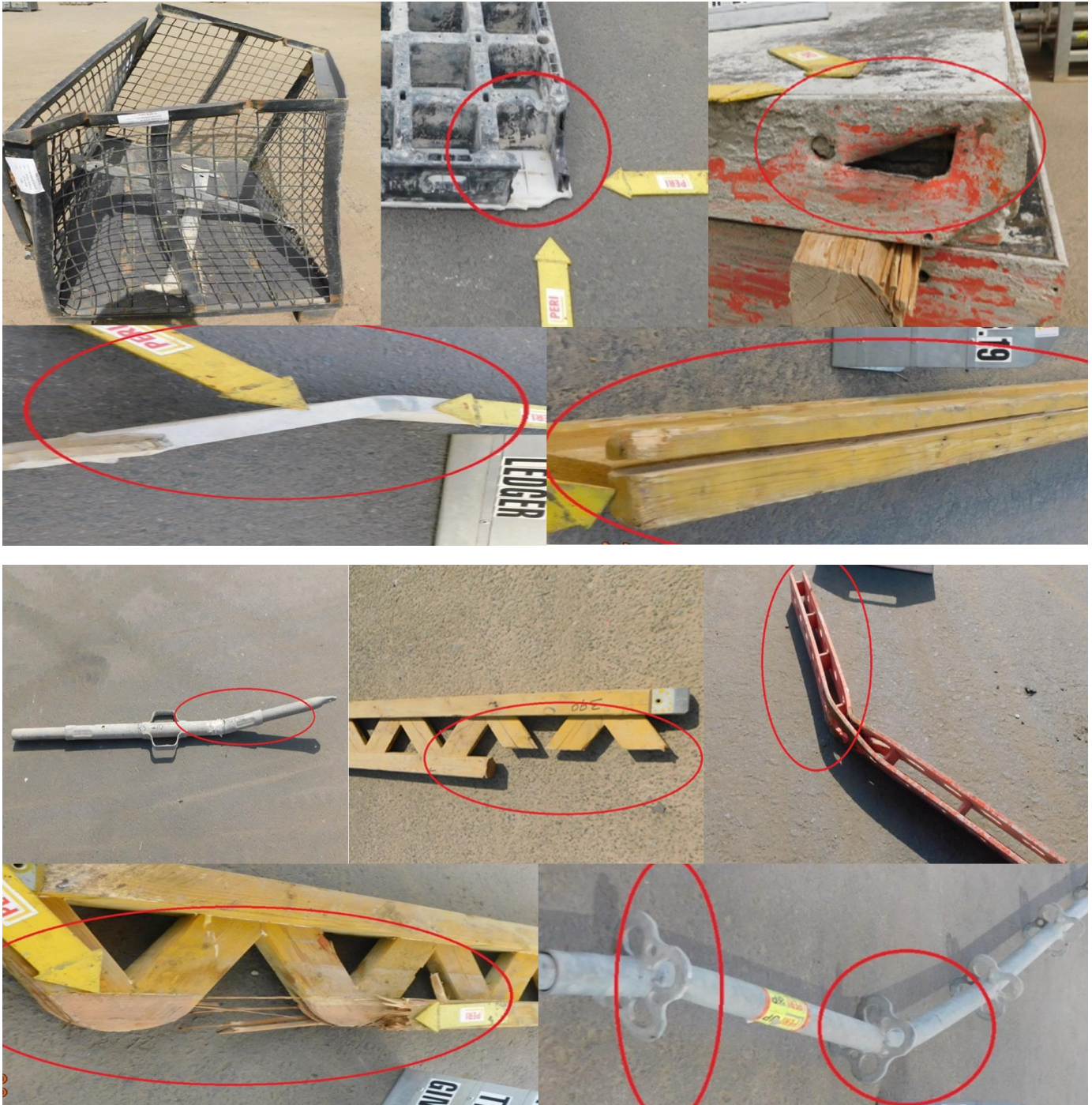


- Caused by cutting / resizing



# Common damages on site

- Site observations / Common damages





# Examples of extra cleaning / Charges

- Extra cleaning / Charges





## Examples of extra cleaning / Charges

- Extra cleaning / Charges



## References

- **Refer to PERI rental criteria's**
- **Zero Damage Catalogue**
- **Contact PERI staff for clarifications**
- **Refer to PERI's documentations**
  - Shop drawing & Calculation
  - Design tables
  - Catalogues & Instruction for use





**Questions and comments are welcome**

Many thanks for your attention!

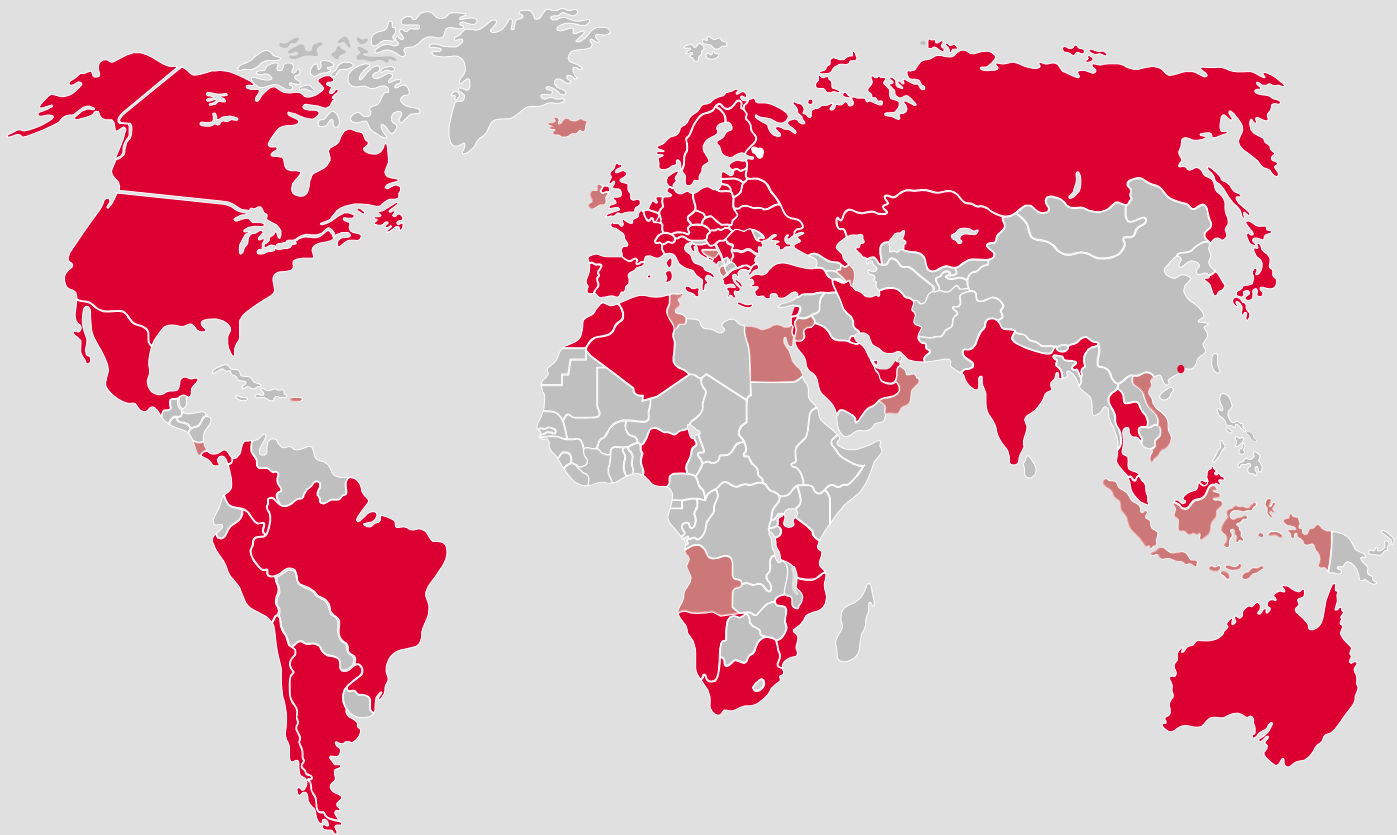


PERI THAILAND TEAM

*Thank you!*



# PERI International



## The Americas

1982 United States of America  
 1995 Canada  
 1996 Brazil, Argentina, Chile  
 2003 Mexico  
 2008 Panama, Peru  
 2012 Colombia

## Asia

1990 Turkey  
 1991 Singapore, Malaysia  
 1994 Korea  
 1997 United Arab Emirates  
 1999 Israel  
 2005 Japan, Iran  
 2007 Kazakhstan, Qatar, India  
 2013 Saudi Arabia, Kuwait  
 2014 Philippines, Thailand, Lebanon  
 2015 Hongkong

## Africa

2011 South Africa  
 2012 Algeria  
 2014 Nigeria  
 2015 Tanzania, Namibia, Mozambique  
 2016 Morocco

## Oceania

1997 Australia

## Europe

1969 Germany  
 1974 Switzerland, France  
 1975 Spain  
 1979 Belgium/Luxembourg, Netherlands  
 1983 Italy  
 1989 United Kingdom  
 1990 Hungary  
 1992 Czech Republic, Austria  
 1993 Finland, Poland, Denmark, Norway, Sweden

1994 Portugal  
 1996 Romania, Slovakia  
 1999 Greece  
 2000 Ukraine, Bulgaria  
 2002 Estonia, Lithuania  
 2003 Latvia, Serbia  
 2004 Croatia  
 2006 Russia  
 2007 Belarus

# The optimal System for every Project and every Requirement



Wall Formwork



Column Formwork



Slab Formwork



Climbing Systems



Tunnel Formwork



Bridge Formwork



Shoring Systems



Construction Scaffold



Facade Scaffold



Industrial Scaffold



Access



Protection Scaffold



System-Independent Accessories



Services



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