

# PRESSURE-TREATED WOOD

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Simpson Strong-Tie



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CC  
ACZA  
CA-B BAC  
SBX ACC Amine  
Pentachlorophenol  
CBA-A Preserve ACQ-C  
Wolmanized Organic CCA-C  
Nature Wood DDAC Creosote  
Ammoniacal Copper Napthenate  
Disodium Octaborate Tetrahydrate



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## Trade Names

- **Copper Azole**
  - CBA-A, CA-B
- **Alkaline Copper Quat**
  - ACQ Types B, C, D, (CF)
- **Sodium Borate**
  - SBX (Disodium Octaborate Tetrahydrate)
- **Ammoniacal Copper Zinc Arsenate**
  - ACZA
- **Natural Select / Wolmanized Nat. Sel.**
- **Preserve, Preserve Plus, Nature Wood**
- **SilBor, Pac-Bor, Tim-Bor, DuraBor, DuraSill, Cal-Bor, Advance Gaurd, TimberSaverPT**
- **Chemonite**



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## Hot-Dip Galvanizing

- Continuous vs. Batch
- Range of coating thickness
  - Increased thickness improves performance
  - Electroplating is not HDG (too thin)



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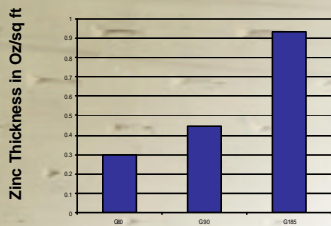
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## Galvanizing Weight

Average One Side Zinc Thickness Per Standard



ASTM Standard



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## HDG Comparison

- **ASTM A653**
    - Steel Sheet
    - G185
  - **ASTM A123**
    - Steel Products
    - <1/16" thick
  - **ASTM A153**
    - Steel Hardware
    - <=3/8" dia.
  - **ASTM B695**
    - M.G. Hardware
    - Class 55
- 1.85 oz./sq.ft. (total)
  - 2.0 oz./sq.ft. (total)
  - 2.0 oz./sq.ft. (total)
  - 2.4 oz./sq.ft. (total)



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## Test History

- Began corrosion testing in **2002**
- All tests **Independently witnessed**
- **3 test groups** 8-02, 10-02, & 4-03
  - 1760 E-12 Tests (2 wafer)
  - 3000+ Fasteners
  - 130 Single Side Installation (1 wafer)



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## Scope of Testing

### Wood Treatment

1. CCA-C
2. CBA-A
3. CA-B
4. ACQ (various)
5. SBX (various)
6. ACZA
7. Untreated

### Metal Finishes

1. 304 & 316 SS
2. Batch HDG
3. G60, G90
4. ZMAX
5. Uncoated
6. SST Grey Paint
7. Others



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## E-12 Samples



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## Single Side Tests



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## Fastener Samples



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## Retentions

- **ACQ** (CF) 0.36 pcf (Spec. 0.40)
- **SBX** 0.33 pcf (Spec. 0.40)
- **CCA-C** 0.37 pcf (Spec. 0.40)
- **CA-B** 0.16 pcf (Spec. 0.208)

• Note: Retention in 2x blocks used in fastener tests were typ a little higher.

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## Test Implications

- All information is based on observations of our limited tests. There is no intention to express any preference between treatment options, and **no** intention to express **life expectancy** for any usage.



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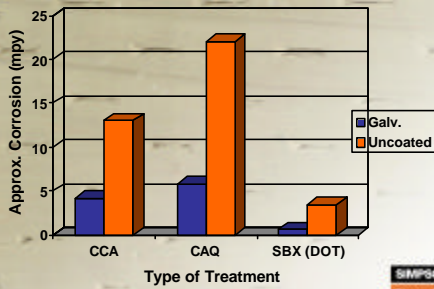
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## Test Results (E12)

CAQ = CA-B & ACQ(CF) Combined Average



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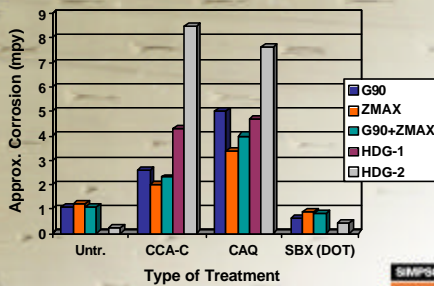
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## Test Results (E12)

CAQ = CA-B & ACQ(CF) Combined Average



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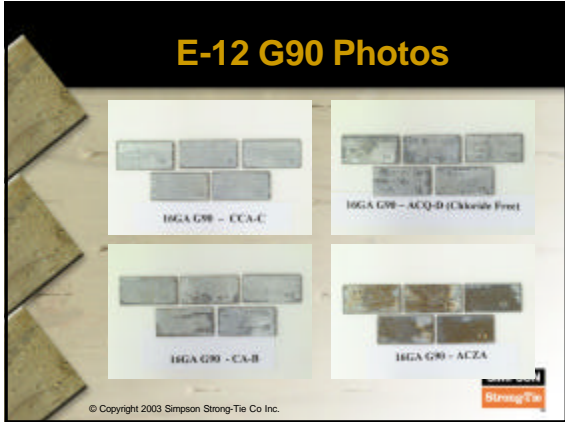
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## E-12 G90 Photos



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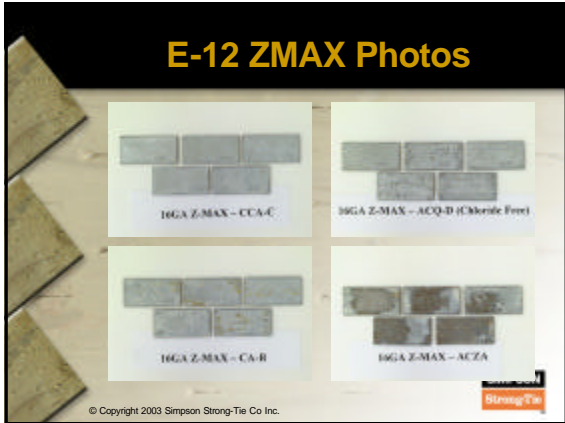
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## E-12 ZMAX Photos



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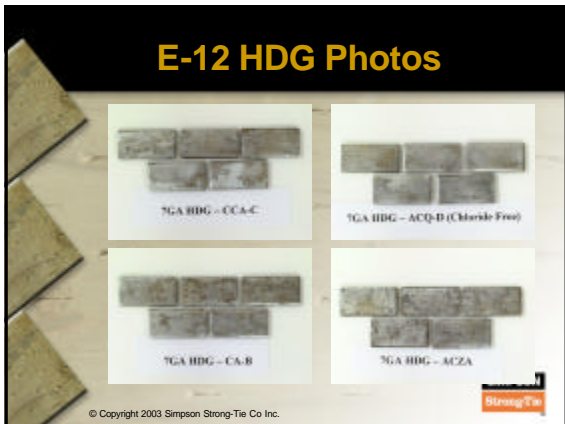
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## E-12 HDG Photos



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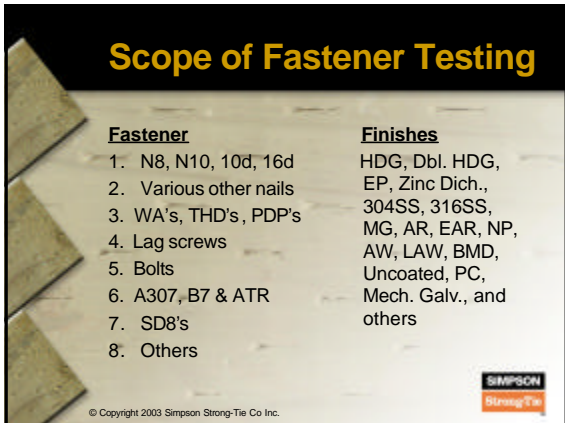
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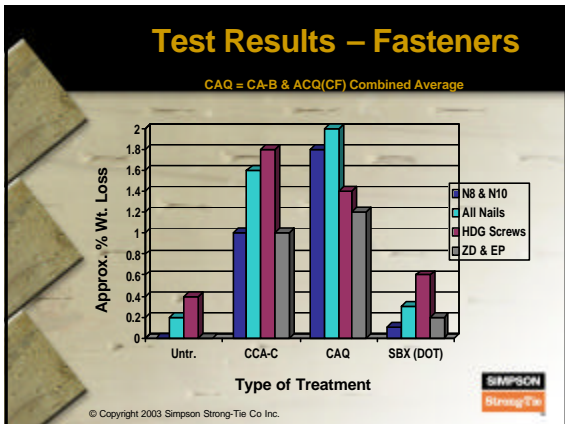
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## What We Know For Sure

- ACQ & CA are **more corrosive** than CCA-C
- SBX has **comparable corrosion** to CCA-C
- **Barriers** may help protect connectors but **don't forget** about the fasteners
- Treated wood should be "dry" when installed (M.C. <19%)



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## Talking Points

- G60 galvanized products should not be used with the new treated woods.
- Uncoated and painted products should not be used with treated woods.
- G90 galvanized products can be used with Sodium Borate (DOT)
- Type 304 or 316 stainless steel connectors and fasteners should be used with ACZA treated wood and some variations of ACQ treated woods.
- **Don't mix Stainless Steel and HDG**



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## Talking Points

- Due to the many variables involved, many of which are controlled by the chemical supplier and the woodtreater, we cannot unilaterally recommend any galvanized or other coating for use with treated wood.
- We suggest that all users and dealers obtain recommendations for Batch/Post Hot-Dip Galvanized, G-185 galvanized, or other coatings from their treated wood supplier.
- Because of all the variables, Simpson Strong-Tie cannot provide estimates on service life for connectors or fasteners.



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**Thank You!**

- Review [www.strongtie.com/info](http://www.strongtie.com/info) for other critical information.



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