

# SPECIAL INSPECTION TABLES

REQUIRED VERIFICATION AND INSPECTION OF SOILS  
TABLE 1709.6

| VERIFICATION AND INSPECTION   | CONTINUOUS DURING TASK LISTED | PERIODICALLY DURING TASK LISTED |
|---|-------------------------------|---------------------------------|
| 1. VERIFY MATERIALS BELOW FOOTINGS ARE ADEQUATE TO ACHIEVE THE DESIGN BEARING CAPACITY.                               | ---                           | X                               |
| 2. VERIFY EXCAVATIONS ARE EXTENDED TO PROPER DEPTH AND HAVE REACHED PROPER MATERIAL.                                  | ---                           | X                               |
| 3. PERFORM CLASSIFICATION AND TESTING OF CONTROLLED FILL MATERIALS.   | ---                           | X                               |
| 4. VERIFY USE OF PROPER MATERIALS, DENSITIES AND LIFT THICKNESSES DURING PLACEMENT AND COMPACTION OF CONTROLLED FILL. | X                             | ---                             |
| 5. PRIOR TO PLACEMENT OF CONTROLLED FILL, OBSERVE SUBGRADE AND VERIFY THAT SITE HAS BEEN PREPARED PROPERLY.           | ---                           | X                               |

REQUIRED SPECIAL INSPECTIONS AND TESTS OF CONCRETE CONSTRUCTION  
TABLE 1709.5

| TYPE  | CONTINUOUS SPECIAL INSPECTION | PERIODIC SPECIAL INSPECTION | REFERENCE STANDARD <sup>a</sup>               | IBC REFERENCE                  |
|---|-------------------------------|-----------------------------|---|--------------------------------|
| 1. INSPECT REINFORCEMENT, INCLUDING PRESTRESSING TENDONS, AND VERIFY PLACEMENT  | ---                           | X                           | ACI 318: CH. 20, 25.2, 25.3, 26.6.1-26.6.3    | 1908.4                         |
| 2. REINFORCING BAR WELDING:<br>a. VERIFY WELDABILITY OF REINFORCING BARS OTHER THAN ASTM A106;<br>b. INSPECT SINGLE-PASS FILLET WELDS, MAXIMUM 5/16" AND<br>c. INSPECT ALL OTHER WELDS.   | ---                           | X                           | AMS D14<br>ACI 318: 26.4.4                    | ---                            |
| 3. INSPECT ANCHORS CAST IN CONCRETE.  | ---                           | X                           | ACI 318: 17.8.2                               | ---                            |
| 4. INSPECT ANCHORS POST-INSTALLED IN HARDENED CONCRETE MEMBERS:<br>A. ADHESIVE ANCHORS INSTALLED IN HORIZONTALLY OR UPWARDLY INCLINED ORIENTATIONS TO RESIST SUSTAINED TENSION LOADS.<br>B. MECHANICAL ANCHORS AND ADHESIVE ANCHORS NOT DEFINED IN 4.a. | X                             | ---                         | ACI 318: 17.8.2.4                             | ---                            |
| 5. VERIFY USE OF REQUIRED DESIGN MIX.   | ---                           | X                           | ACI 318: CH. 19, 26.4.3, 26.4.4               | 1904.1, 1904.2, 1908.2, 1908.3 |
| 6. PRIOR TO CONCRETE PLACEMENT, FABRICATE SPECIMENS FOR STRENGTH TESTS, PERFORM SLUMP AND AIR CONTENT TESTS, AND DETERMINE THE TEMPERATURE OF THE CONCRETE.   | X                             | ---                         | ASTM C112<br>ASTM C31<br>ACI 318: 26.5, 26.12 | 1908.10                        |
| 7. INSPECT CONCRETE AND SHOTCRETE PLACEMENT FOR PROPER APPLICATION TECHNIQUES.  | X                             | ---                         | ACI 318: 26.5                                 | 1908.6, 1908.7, 1908.8         |
| 8. VERIFY MAINTENANCE OF SPECIFIED CURING TEMPERATURE AND TECHNIQUES  | ---                           | X                           | ACI 318: 26.5.3-26.5.5                        | 1908.9                         |
| 9. INSPECT PRESTRESSED CONCRETE FOR:<br>A. APPLICATION OF PRESTRESSING FORCES, AND<br>B. GROUTING OF BONDED PRESTRESSING TENDONS.   | X                             | ---                         | ACI 318: 26.10                                | ---                            |
| 10. INSPECT ERECTION OF PRECAST CONCRETE MEMBERS.   | ---                           | X                           | ACI 318: 26.9                                 | ---                            |
| 11. VERIFY IN-SITU CONCRETE STRENGTH, PRIOR TO STRESSING OF TENDONS IN POST-TENSIONED CONCRETE AND PRIOR TO REMOVAL OF SHORES AND FORMS FROM BEAMS AND STRUCTURAL SLABS.  | ---                           | X                           | ACI 318: 26.11.2                              | ---                            |
| 12. INSPECT FORMWORK FOR SHAPE, LOCATION AND DIMENSIONS OF THE CONCRETE MEMBER BEING FORMED.  | ---                           | X                           | ACI 318: 26.11.2(b)                           | ---                            |

FOR 5/16 INCH = 25.4 mm.  
a. WHERE APPLICABLE SEE ALSO SECTION 1709.12, SPECIAL INSPECTIONS FOR SEISMIC RESISTANCE.  
b. SPECIFIC REQUIREMENTS FOR SPECIAL INSPECTION SHALL BE INCLUDED IN THE RESEARCH REPORT FOR THE ANCHOR ISSUED BY AN APPROVED SOURCE IN ACCORDANCE WITH 17.8.2 IN ACI 318, OR OTHER QUALIFICATION PROCEDURES. WHERE SPECIFIC REQUIREMENTS ARE NOT PROVIDED, SPECIAL INSPECTION REQUIREMENTS SHALL BE SPECIFIED BY THE REGISTERED DESIGN PROFESSIONAL AND SHALL BE APPROVED BY THE BUILDING OFFICIAL PRIOR TO THE COMMENCEMENT OF THE WORK.

REQUIRED VERIFICATION AND INSPECTION OF STEEL CONSTRUCTION  
AISC 360-10 CHAPTER N - TABLE N5.4-1  
INSPECTION TASKS PRIOR TO BOLTING (SNAG-TIGHT)

| INSPECTION TASKS PRIOR TO BOLTING  | QC | QA |
|--|----|----|
| MANUFACTURER'S CERTIFICATIONS AVAILABLE FOR FASTENER MATERIALS   | O  | P  |
| FASTENERS MARKED IN ACCORDANCE WITH ASTM REQUIREMENTS  | O  | O  |
| PROPER FASTENERS SELECTED FOR THE JOINT DETAIL (GRADE, TYPE, BOLT LENGTH IF THREADS ARE TO BE EXCLUDED FROM SHEAR PLANE)                   | O  | O  |
| PROPER BOLTING PROCEDURE SELECTED FOR JOINT DETAIL   | O  | O  |
| CONNECTING ELEMENTS, INCLUDING THE APPROPRIATE FINISHES SURFACE CONDITION AND HOLE PREPARATION, IF SPECIFIED, MEET APPLICABLE REQUIREMENTS | O  | O  |
| PRE-INSTALLATION VERIFICATION TESTING BY INSTALLATION PERSONNEL OBSERVED AND DOCUMENTED FOR FASTENER ASSEMBLIES AND METHODS USED           | P  | O  |
| PROPER STORAGE PROVIDED FOR BOLTS, NUTS, WASHERS AND OTHER FASTENER COMPONENTS   | O  | O  |

NOTE:  
O - OBSERVE THESE ITEMS ON A RANDOM BASIS. OPERATIONS NEED NOT BE DELAYED PENDING THESE INSPECTIONS.  
P - PERFORM THESE TASKS FOR EACH WELDED JOINT OR MEMBER.

REQUIRED VERIFICATION AND INSPECTION OF STEEL CONSTRUCTION  
AISC 360-10 CHAPTER N - TABLE N5.4-3  
INSPECTION TASKS AFTER BOLTING

| INSPECTION TASKS AFTER BOLTING                         | QC | QA |
|--|----|----|
| DOCUMENT ACCEPTANCE OR REJECTION OF BOLTED CONNECTIONS | P  | P  |

NOTE:  
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REQUIRED VERIFICATION AND INSPECTION OF STEEL CONSTRUCTION  
AISC 360-10 CHAPTER N - TABLE N5.4-1  
INSPECTION PRIOR TO WELDING

| INSPECTION TASKS PRIOR TO WELDING   | QC | QA |
|---|----|----|
| WELDING PROCEDURE SPECIFICATIONS (WPS) AVAILABLE  | P  | P  |
| MANUFACTURER CERTIFICATIONS FOR WELDING CONSUMABLES AVAILABLE   | P  | P  |
| MATERIAL IDENTIFICATION (TYPE/GRADE)  | O  | O  |
| WELDED IDENTIFICATION SYSTEM <sup>1</sup>   | O  | O  |
| FIT-UP OF GROOVE WELDS (INCLUDING JOINT GEOMETRY)<br>• JOINT PREPARATION<br>• DIMENSIONS (ALIGNMENT, ROOT OPENING, FOOT FACE, BEVEL)<br>• CLEANLINESS (CONDITION OF STEEL SURFACES)<br>• TACKING (TACK WELD QUALITY AND LOCATION)<br>• BACKING TYPE AND FIT (IF APPLICABLE) | O  | O  |
| CONFIGURATION AND FINISH OF ACCESS HOLES  | O  | O  |
| FIT-UP OF FILLET WELDS<br>• DIMENSIONS (ALIGNMENT, GAPS AT ROOT)<br>• CLEANLINESS (CONDITION OF STEEL SURFACES)<br>• TACKING (TACK WELD QUALITY AND LOCATION)   | O  | O  |
| CHECK WELDING EQUIPMENT   | O  | -  |

THE FABRICATOR OR ERECTOR, AS APPLICABLE, SHALL MAINTAIN A SYSTEM BY WHICH A WELDER WHO HAS WELDED A JOINT OR MEMBER CAN BE IDENTIFIED. STAMP, IF USED, SHALL BE THE LOW-STRESS TYPE.

NOTE:  
IN THESE TABLES, THE OBSERVATION OF WELDING OPERATIONS AND VISUAL INSPECTION TASKS ARE AS FOLLOWS:  
O - OBSERVE THESE ITEMS ON A RANDOM BASIS. OPERATIONS NEED NOT BE DELAYED PENDING THESE INSPECTIONS.  
P - PERFORM THESE TASKS FOR EACH WELDED JOINT OR MEMBER.

REQUIRED VERIFICATION AND INSPECTION OF STEEL CONSTRUCTION  
AISC 360-10 CHAPTER N - TABLE N5.4-2  
INSPECTION TASKS DURING WELDING

| INSPECTION TASKS DURING WELDING   | QC | QA |
|---|----|----|
| USE OF QUALIFIED WELDERS  | O  | O  |
| CONTROL AND HANDLING OF WELDING CONSUMABLES<br>• PACKAGING<br>• EXPOSURE CONTROL  | O  | O  |
| NO WELDING OVER CRACKED TACK WELDS  | O  | O  |
| ENVIRONMENTAL CONDITIONS<br>• WIND SPEED WITHIN LIMITS<br>• PRECIPITATION AND TEMPERATURE   | O  | O  |
| WPS FOLLOWED<br>• SETTINGS ON WELDING EQUIPMENT<br>• TRAVEL SPEED<br>• SELECTED WELDING MATERIALS<br>• SHIELDING GAS TYPE/FLOW RATE<br>• PREHEAT APPLIED<br>• INTERPASS TEMPERATURE MAINTAINED (MIN/MAX)<br>• PROPER POSITION (F, V, H, OH) | O  | O  |
| WELDING TECHNIQUES<br>• INTERPASS AND FINAL CLEANING<br>• EACH PASS WITHIN PROFILE LIMITATIONS<br>• EACH PASS MEETS QUALITY REQUIREMENTS  | O  | O  |

NOTE:  
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REQUIRED VERIFICATION AND INSPECTION OF STEEL CONSTRUCTION  
AISC 360-10 CHAPTER N - TABLE N5.4-3  
INSPECTION TASKS AFTER WELDING

| INSPECTION TASKS AFTER WELDING   | QC | QA |
|--|----|----|
| WELDS CLEANED  | O  | O  |
| SIZE, LENGTH AND LOCATION OF WELDS   | P  | P  |
| WELDS MEET VISUAL ACCEPTANCE CRITERIA<br>• CRACK PROHIBITION<br>• WELD/BASE-METAL FUSION<br>• CRATER CROSS SECTION<br>• WELD PROFILES<br>• WELD SIZE<br>• UNDERCUT<br>• POROSITY | P  | P  |
| ARG STRIKES  | P  | P  |
| K-AREA <sup>1</sup>  | P  | P  |
| BACKING REMOVED AND WELD TABS REMOVED (IF REQUIRED)  | P  | P  |
| REPAIR ACTIVITIES  | P  | P  |
| DOCUMENT ACCEPTANCE OR REJECTION OF WELDED JOINT OR MEMBER   | P  | P  |

<sup>1</sup> WHEN WELDING OF DOUBLER PLATES, CONTINUITY PLATES OR STIFFENERS HAS BEEN PERFORMED IN THE K-AREA, VISUALLY INSPECT THE WEB K-AREA FOR CRACKS WITHIN IN. (75 mm) OF THE WELD.

NOTE:  
IN THESE TABLES, THE OBSERVATION OF WELDING OPERATIONS AND VISUAL INSPECTION TASKS ARE AS FOLLOWS:  
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P - PERFORM THESE TASKS FOR EACH WELDED JOINT OR MEMBER.

## STATEMENT OF SPECIAL INSPECTION:

- THE FOLLOWING ITEMS REQUIRE SPECIAL STRUCTURAL INSPECTIONS PER THE BUILDING OFFICIAL:  
A) CONCRETE CONSTRUCTION  
B) SOILS  
C) SPECIAL CASES
- THE TYPE AND EXTENT OF EACH SPECIAL INSPECTION IS SHOWN IN THE 'VERIFICATION AND INSPECTION' TABLES INCLUDED ON THIS SHEET FOR ITEMS A-B ABOVE. FOR SPECIAL CASES, INSPECTIONS OF EPOXY AND EXPANSION ANCHORS REQUIRED.
- THE TYPE AND EXTENT OF EACH TEST IS INCLUDED IN THE 'VERIFICATION AND INSPECTION' TABLES INCLUDED ON THIS SHEET.
- FOR EACH TYPE OF SPECIAL INSPECTION THE IDENTIFICATION OF CONTINUOUS OR PERIODIC INSPECTION IS INCLUDED IN THE 'VERIFICATION AND INSPECTION' TABLE ON THIS SHEET.
- THIS BUILDING IS SEISMIC DESIGN CATEGORY B, THEREFORE NO FURTHER SEISMIC REQUIREMENTS ARE NECESSARY IN THIS STATEMENT.

| EXPANSION, EPOXY, SCREW-IN, AND SHOT PIN ANCHORS |           |          |                     |       |
|--|-----------|----------|---------------------|-------|
| PRODUCT  | CONCRETE  |          | CMU                 | STEEL |
|  | UNCRACKED | CRACKED  |                     |       |
| HILTI 'KNIK BOLT KB1'                            | ER-67B    | ER-67B   | ER-67T              | N/A   |
| HILTI 'KNIK BOLT T22'                            | ESR-4266  | ESR-4266 | ESR-4261            | N/A   |
| HILTI 'HDA' (UNDERCUT)                           | ESR-1546  | ESR-1546 | N/A                 | N/A   |
| HILTI 'HSL-4'                                    | ESR-4386  | ESR-4386 | N/A                 | N/A   |
| DEPALT 'POWER-STUD-501'                          | ESR-2818  | ESR-2818 | ESR-2866            | N/A   |
| DEPALT 'POWER-STUD-502'                          | ESR-2502  | ESR-2502 | N/A                 | N/A   |
| DEPALT 'GCH' (UNDERCUT)                          | ESR-4810  | ESR-4810 | N/A                 | N/A   |
| SIMPSON 'STRONG-BOLT2'                           | ESR-3031  | ESR-3031 | (APPROVED) ESR-2402 | N/A   |
| SIMPSON 'WEDGE-ALL'                              | N/A       | N/A      | ESR-1946            | N/A   |

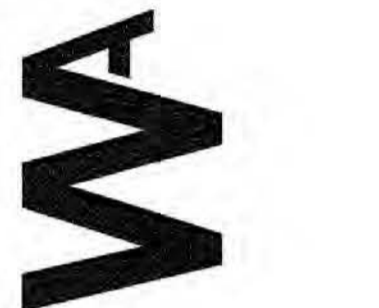
|                       |          |          |                              |     |
|-----------------------|----------|----------|------------------------------|-----|
| HILTI 'HIT-HY 270'    | N/A      | N/A      | ESR-4143                     | N/A |
| HILTI 'HIT-HY 200 V3' | ESR-4868 | ESR-4868 | ESR-4144 AT MULTI-MYTH BRICK | N/A |
| HILTI 'HIT-RE 500 V3' | ESR-5814 | ESR-5814 | ESR-4878                     | N/A |
| DEPALT 'AC100GOLD'    | ESR-2582 | ESR-2582 | ESR-4810                     | N/A |
| DEPALT 'AC200'        | ESR-4021 | ESR-4021 | N/A                          | N/A |
| DEPALT 'PURE220'      | ESR-5144 | ESR-5144 | N/A                          | N/A |
| SIMPSON 'SET'         | N/A      | N/A      | ESR-1772                     | N/A |
| SIMPSON 'SET-36'      | ESR-4057 | ESR-4057 | ESR-4844                     | N/A |

|                     |          |          |          |     |
|---------------------|----------|----------|----------|-----|
| HILTI 'KNIK HUS-E2' | ESR-3027 | ESR-3027 | ESR-3056 | N/A |
| DEPALT 'SCREW-BOLT' | ESR-5884 | ESR-5884 | ESR-4042 | N/A |
| SIMPSON 'TITEN HD'  | ESR-2715 | ESR-2715 | ESR-1056 | N/A |

|                         |          |     |          |          |
|-------------------------|----------|-----|----------|----------|
| HILTI 'X-P'             | ESR-2264 | N/A | N/A      | N/A      |
| HILTI 'X-U'             | ESR-2264 | N/A | ESR-2264 | ESR-2264 |
| HILTI 'X-ENP14'         | N/A      | N/A | N/A      | ESR-2191 |
| HILTI 'X-HSN 24'        | N/A      | N/A | N/A      | N/A      |
| HILTI 'X-GP'            | ESR-2374 | N/A | N/A      | N/A      |
| POWERS/DEPALT 'TRAK-IT' | ESR-5275 | N/A | ESR-5275 | ESR-5275 |
| DEPALT 'CS1'            | ESR-2024 | N/A | ESR-2024 | ESR-2024 |
| SIMPSON (ALL PINS)      | ESR-2186 | N/A | ESR-2186 | ESR-2186 |



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revisions

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