



Special Inspection, Material Testing & Structural Observation Items Required by Chapter 17 of the 2015 IBC

Indicate items requiring special inspection, structural testing, or structural observations by checking the appropriate box. All items not requiring inspection/testing should be removed from the form. For items requiring continuous inspection, a special inspector must be present onsite during the performance of that task. In most cases “periodic” inspections/tests shall be performed prior to commencing the task, intermittently during the task, and at the completion of the task. The “Detailed Instructions & Frequency” provides a description of the presumed requirements for tasks requiring “periodic” inspections. The design professional in responsible charge should revise the requirements as needed on a project-specific basis.

FABRICATORS (IBC 1704.2.5 & 1705.10)

<input type="checkbox"/> Approved Fabricator	Yes	No
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Fabricators Name:			
Fabricators plant location			
Required In-plant Inspections	<input type="checkbox"/> Steel Construction	<input type="checkbox"/> Concrete Construction	<input type="checkbox"/> Wood Construction
	<input type="checkbox"/> Cold-formed Construction	<input type="checkbox"/> Other: _____	<input type="checkbox"/> Other: _____

STRUCTURAL STEEL (IBC 1705.2.1, 1705.12.1 & 1705.13.1)

<i>Item</i>	<i>Detailed Instructions and Frequencies</i>
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PRIOR TO WELDING (TABLE N5.4-1, AISC 360-10):			
Verify welding procedures (WPS) and consumable certificates	<input checked="" type="checkbox"/> Continuous	<input type="checkbox"/> Periodic	
Material identification	<input type="checkbox"/> Continuous	<input checked="" type="checkbox"/> Periodic	Verify type and grade of material.
Welder identification	<input type="checkbox"/> Continuous	<input checked="" type="checkbox"/> Periodic	A system shall be maintained by which a welder who has welded a joint or member can be identified.
Fit-up groove welds	<input type="checkbox"/> Continuous	<input checked="" type="checkbox"/> Periodic	Verify joint preparation, dimensions, cleanliness, tacking, and backing.
Access holes	<input type="checkbox"/> Continuous	<input checked="" type="checkbox"/> Periodic	Verify configuration and finish.
Fit-up of fillet welds	<input type="checkbox"/> Continuous	<input checked="" type="checkbox"/> Periodic	Verify alignment, gaps at root, cleanliness of steel surfaces, and tack weld quality and location.
DURING WELDING (TABLE N5.4-2, AISC 360-10):			
Use of qualified welders	<input type="checkbox"/> Continuous	<input checked="" type="checkbox"/> Periodic	Verify that welders are appropriately qualified.
Control and handling of welding consumables	<input type="checkbox"/> Continuous	<input checked="" type="checkbox"/> Periodic	Verify packaging and exposure control.
Cracked tack welds	<input type="checkbox"/> Continuous	<input checked="" type="checkbox"/> Periodic	Verify that welding does not occur over cracked tack welds.
Environmental conditions	<input type="checkbox"/> Continuous	<input checked="" type="checkbox"/> Periodic	Verify win speed is within limits as well as precipitation and temperature.
WPS followed	<input type="checkbox"/> Continuous	<input checked="" type="checkbox"/> Periodic	Verify items such as settings on welding equipment, travel speed, welding materials, shielding gas type/flow rate, preheat applied, interpass temperature maintained, and proper position.
Welding techniques	<input type="checkbox"/> Continuous	<input checked="" type="checkbox"/> Periodic	Verify interpass and final cleaning, each pass is within profile limitations, and quality of each pass.



AFTER WELDING (TABLE N5.4-3, AISC 360-10):			
Welds cleaned	<input type="checkbox"/> Continuous	<input checked="" type="checkbox"/> Periodic	Verify that welds have been propyl cleaned.
Size, length, and location of welds	<input checked="" type="checkbox"/> Continuous	<input type="checkbox"/> Periodic	
Welds meet visual acceptance criteria	<input checked="" type="checkbox"/> Continuous	<input type="checkbox"/> Periodic	
Arc strikes	<input checked="" type="checkbox"/> Continuous	<input type="checkbox"/> Periodic	
k-area	<input checked="" type="checkbox"/> Continuous	<input type="checkbox"/> Periodic	
Backing & weld tabs removed	<input checked="" type="checkbox"/> Continuous	<input type="checkbox"/> Periodic	
Repair activities	<input checked="" type="checkbox"/> Continuous	<input type="checkbox"/> Periodic	
Document acceptance or rejection of welded joint/member	<input checked="" type="checkbox"/> Continuous	<input type="checkbox"/> Periodic	
NONDESTRUCTIVE TESTING (SECTION N5.5, AISC 360-10):			
CJP welds (Risk Cat. II)	<input type="checkbox"/> Continuous	<input checked="" type="checkbox"/> Periodic	Ultrasonic testing shall be performed on 10% of CJP groove welds in butt, T- and corner joints subject to transversely applied tension loading in materials 5/16-inch thick or greater. Testing rate must be increased if > 5% of welds tested have unacceptable defects.
CJP welds (Risk Cat. III or IV)	<input checked="" type="checkbox"/> Continuous	<input type="checkbox"/> Periodic	<i>A reduction in the rate of ultrasonic testing is allowed per Section N5.5e.</i>
Access holes (flange > 2")	<input checked="" type="checkbox"/> Continuous	<input type="checkbox"/> Periodic	
Welded joints subject to fatigue	<input checked="" type="checkbox"/> Continuous	<input type="checkbox"/> Periodic	
PRIOR TO BOLTING (TABLE N5.6-1, AISC 360-10):			
<ul style="list-style-type: none"> ➤ <i>Not required if only snug-tight joints are specified [per Section N5.6(1) of AISC 360-10].</i> 			
Certifications of fasteners	<input checked="" type="checkbox"/> Continuous	<input type="checkbox"/> Periodic	
Fasteners marked	<input type="checkbox"/> Continuous	<input checked="" type="checkbox"/> Periodic	Verify that fasteners have been marked in accordance with ASTM requirements.
Proper fasteners for joint	<input type="checkbox"/> Continuous	<input checked="" type="checkbox"/> Periodic	Verify grade, type, and bolt length if threads are excluded from the shear plane.
Proper bolting procedure	<input type="checkbox"/> Continuous	<input checked="" type="checkbox"/> Periodic	Verify proper procedure is used for the joint detail.
Connecting elements	<input type="checkbox"/> Continuous	<input checked="" type="checkbox"/> Periodic	Verify appropriate faying surface condition and hole preparation, if specified, meet requirements.
Pre-installation verification testing	<input type="checkbox"/> Continuous	<input checked="" type="checkbox"/> Periodic	Observe and document verification testing by installation personnel for fastener assemblies and methods used.
Proper storage	<input type="checkbox"/> Continuous	<input checked="" type="checkbox"/> Periodic	Verify proper storage of bolts, nuts, washers, and other fastener components.
DURING BOLTING (TABLE N5.6-2, AISC 360-10):			
<ul style="list-style-type: none"> ➤ <i>Not required if only snug-tight joints are specified [per Section N5.6(1) of AISC 360-10].</i> ➤ <i>Not required for pretensioned joints using turn-of-the-nut method with match-marking, direct-tension-indicators, or twist-off type tension control method [per Section N5.6(2) of AISC 360-10].</i> 			
Fastener assemblies	<input type="checkbox"/> Continuous	<input checked="" type="checkbox"/> Periodic	Verify that fastener assemblies are of suitable condition, paced in all holes, and washers are positioned as required.
Snug-tight prior to pretensioning	<input type="checkbox"/> Continuous	<input checked="" type="checkbox"/> Periodic	Verify that joints are brought to snug-tight condition prior to pretensioning operation.
Fastener component	<input type="checkbox"/> Continuous	<input checked="" type="checkbox"/> Periodic	Verify that fastener component is not turned by wrench prevented from rotating.



Pretensioned fasteners	<input type="checkbox"/> Continuous	<input checked="" type="checkbox"/> Periodic	Verify that fasteners are Pretensioned in accordance with RCSC Specification, progressing systematically from the most rigid point toward the free edges.
AFTER BOLTING (TABLE N5.6-3, AISC 360-10):			
Document acceptance or rejection of bolted connections	<input checked="" type="checkbox"/> Continuous	<input type="checkbox"/> Periodic	
OTHER STEEL INSPECTIONS (SECTION N5.7, AISC 360-10; Tables J8-1 & J10-1, AISC 341-10):			
Structural steel details	<input type="checkbox"/> Continuous	<input checked="" type="checkbox"/> Periodic	All fabricated steel or steel frames shall be inspected to verify compliance with the details shown in the construction documents, such as braces, stiffeners, member locations, and proper application of joint details at each connection.
Anchor rods and other embedments supporting structural steel	<input type="checkbox"/> Continuous	<input checked="" type="checkbox"/> Periodic	Shall be on the premises during the placement of anchor rods and other embedments supporting structural steel for compliance with construction documents. Verify the diameter, grade, type, and length of the anchor rod or embedded item, and the extent or depth of embedment prior to placement of concrete.
Reduced beam sections (RBS)	<input type="checkbox"/> Continuous	<input checked="" type="checkbox"/> Periodic	Verify contour and finish as well as dimensional tolerances (<i>see Table J8-1 of AISC 341-10</i>).
Protected zones	<input type="checkbox"/> Continuous	<input checked="" type="checkbox"/> Periodic	Verify that no holes or unapproved attachments are made within the protected zone (<i>see Table J8-1 of AISC 341-10</i>).
H-piles	<input type="checkbox"/> Continuous	<input checked="" type="checkbox"/> Periodic	Verify that no holes or unapproved attachments occur within the protected zones of piling (<i>see Table J10-1 of AISC 341-10</i>).
STEEL ELEMENTS OF COMPOSITE CONSTRUCTION (TABLE N6.1, AISC 360-10; TABLES J9-1 thru J9-3, AISC 341-11):			
Placement and installation of steel deck	<input checked="" type="checkbox"/> Continuous	<input type="checkbox"/> Periodic	
Placement and installation of steel headed stud anchors	<input checked="" type="checkbox"/> Continuous	<input type="checkbox"/> Periodic	
Document acceptance or rejection of steel elements	<input checked="" type="checkbox"/> Continuous	<input type="checkbox"/> Periodic	
Reinforcing steel	<input type="checkbox"/> Continuous	<input checked="" type="checkbox"/> Periodic	Verify appropriate reinforcement size, spacing, and orientation; that it has not been re-bent in field; that it is correctly tied and supported; and that required steel clearances have been provided.
Composite member size	<input type="checkbox"/> Continuous	<input checked="" type="checkbox"/> Periodic	Verify that composite member is the required size.

STEEL CONSTRUCTION OTHER THAN STRUCTURAL STEEL (IBC 1705.2)

Item

Detailed Instructions and Frequencies

STEEL ROOF AND FLOOR DECKS (IBC 1705.2.2; Section 6.1 of SDI QA/QC - 2011):			
Material verification of cold-formed steel deck	<input type="checkbox"/> Continuous	<input checked="" type="checkbox"/> Periodic	Confirm that identification markings are provided to conform to ASTM standards specified on construction documents.
Floor and roof deck welds	<input type="checkbox"/> Continuous	<input checked="" type="checkbox"/> Periodic	Visual inspection is required to confirm that weld meets acceptance criteria of AWS D1.3 and SDI C, SDI NC, SDI RD and manufacturer's instructions.



Floor and roof mechanical fasteners	<input type="checkbox"/> Continuous	<input checked="" type="checkbox"/> Periodic	Visual inspection to confirm fasteners are installed per SDI C, SDI NC, SDI RD and manufacturer's instructions.
Steel deck installation	<input type="checkbox"/> Continuous	<input checked="" type="checkbox"/> Periodic	Verify deck is installed per the approved construction documents, installation drawings, shop drawings and applicable reference standards.
OPEN-WEB STEEL JOISTS AND JOIST GIRDERS (IBC TABLE 1705.2.3):			
End connections – welded or bolted	<input type="checkbox"/> Continuous	<input checked="" type="checkbox"/> Periodic	Visual inspection to confirm that end connections conform to the approved plans and shop drawings.
Bridging – horizontal or diagonal	<input type="checkbox"/> Continuous	<input checked="" type="checkbox"/> Periodic	Visual inspection to confirm that bridging is provided per the approved plans and shop drawings.
COLD-FORMED STEEL CONSTRUCTION (IBC 1705.2.2.1.1, 1705.10.3, and 1705.11.3):			
Trusses spanning > 60-feet	<input type="checkbox"/> Continuous	<input checked="" type="checkbox"/> Periodic	Verify that temporary and permanent truss bracing is installed in accordance with approved truss package. Performed by code inspection firm.
Wind-force-resisting systems or seismic-force-resisting systems	<input type="checkbox"/> Continuous	<input checked="" type="checkbox"/> Periodic	Periodic inspections of welding operations. If fastener spacing is < 4"o.c.: Verify that proper screw attachment, bolting, anchoring and other fastening of shear walls, diaphragms, drag struts, braces, shear panels and holdowns has occurred. Performed by code inspection firm.
Cold-formed steel special bolted moment frame	<input type="checkbox"/> Continuous	<input checked="" type="checkbox"/> Periodic	Visual inspections during installation cold-formed bolted moment frames located in Seismic Design Category 'D-F'.

CONCRETE CONSTRUCTION (IBC 1705.3 & 1705.12.1)

<i>Item</i>			<i>Detailed Instructions and Frequencies</i>
Reinforcing steel, including prestressing tendons	<input type="checkbox"/> Continuous	<input checked="" type="checkbox"/> Periodic	Verify prior to placing concrete that reinforcing is of specified type, grade and size; that it is free of oil, dirt and rust; that it is located and spaced properly; that hooks, bends, ties, stirrups and supplemental reinforcement are placed correctly; that lap lengths, stagger and offsets are provided; and that all mechanical connections are installed per the manufacturer's instructions and/or evaluation report.
Welding of reinforcing steel	<input type="checkbox"/> Continuous	<input checked="" type="checkbox"/> Periodic	Visually inspect all welds and also verify weldability of reinforcing steel based upon carbon equivalent and in accordance with AWS D1.4.
Cast-in bolts & embeds	<input type="checkbox"/> Continuous	<input checked="" type="checkbox"/> Periodic	Inspection of anchors or embeds cast in concrete is required when allowable loads have been increased or where strength design is used.
Post-installed anchors or dowels	<input type="checkbox"/> Continuous	<input checked="" type="checkbox"/> Periodic	All post-installed anchors/dowels shall be specially inspected as required by the approved ICC-ES report. Horizontally or upwardly inclined anchors that resist sustained tension loads require continuous inspection and approved installers.
Use of required mix design	<input type="checkbox"/> Continuous	<input checked="" type="checkbox"/> Periodic	Verify that all mixes used comply with the approved construction documents; ACI 318: Ch. 19, 26.4.3, 26.4.4; and IBC 1904.1, 1904.2, 1908.2, 1908.3.



Concrete sampling for strength tests, slump, air content, and temperature	<input checked="" type="checkbox"/> Continuous	<input type="checkbox"/> Periodic	
Concrete & shotcrete placement	<input checked="" type="checkbox"/> Continuous	<input type="checkbox"/> Periodic	
Curing temperature and techniques	<input type="checkbox"/> Continuous	<input checked="" type="checkbox"/> Periodic	Verify that the ambient temperature for concrete is kept at > 50°F for at least 7 days after placement. High-early-strength concrete shall be kept at > 50°F for at least 3 days. Accelerated curing methods may be used (see ACI 318: 26.4.7-26.4.9). The ambient temperature for shotcrete shall be > 40°F for the same period of time as noted for concrete. Shotcrete shall be kept continuously moist for at least 24 hours after shotcreting. All concrete materials, reinforcement, forms, fillers, and ground shall be free from frost. In hot weather conditions ensure that appropriate measures are taken to avoid plastic shrinkage cracking and that the specified water/cement ratio is not exceeded.
Pre-stressed concrete	<input checked="" type="checkbox"/> Continuous	<input type="checkbox"/> Periodic	
Erection of precast concrete	<input type="checkbox"/> Continuous	<input checked="" type="checkbox"/> Periodic	Verify that all precast elements are lifted, assembled and braced in accordance with the approved construction documents.
Strength verification	<input type="checkbox"/> Continuous	<input checked="" type="checkbox"/> Periodic	Verify that adequate strength has been achieved prior to the removal of shores and forms or the stressing of post-tensioned tendons.
Formwork	<input type="checkbox"/> Continuous	<input checked="" type="checkbox"/> Periodic	Verify that the forms are placed plumb and conform to the shapes, lines, and dimensions of the members as required by the approved construction documents.

MASONRY CONSTRUCTION (IBC 1705.4)

Item

Detailed Instructions and Frequencies

PRIOR TO CONSTRUCTION (ARTICLE 3.1.1, TMS-402/ACI 530.1-13):			
Review material certificates, mix designs, test results and construction procedures	<input type="checkbox"/> Continuous	<input checked="" type="checkbox"/> Periodic	Verify that materials conform to the requirements of the approved construction documents. Mix design, test results, material certificates, and construction procedures should be submitted for review. Mortar mix designs shall conform to ASTM C 270 while grout shall conform to ASTM C 476. Material certificates shall be provided for the following: reinforcement; anchors, ties, fasteners, and metal accessories; masonry units; mortar and grout materials. Construction procedures for cold-weather or hot-weather construction shall be reviewed.
AS CONSTRUCTION BEGINS (TABLE 3.1.2, TMS-402/ACI 530-13):			
Proportions of site-prepared mortar	<input type="checkbox"/> Continuous	<input checked="" type="checkbox"/> Periodic	Verify that mortar is of the type and color specified on the construction documents, that it conforms to ASTM C 270, and that it is mixed in accordance with Article 2.6 A of TMS-602.



Construction of mortar joints	<input type="checkbox"/> Continuous	<input checked="" type="checkbox"/> Periodic	Verify that mortar joints comply with Article 3.3 B of TMS-602.
Grade and size of prestressing tendons and anchorages	<input type="checkbox"/> Continuous	<input checked="" type="checkbox"/> Periodic	Verify that prestressing tendons comply with Article 2.4 B of TMS-602 and that anchorages, couplers, and end blocks comply with Article 2.4 H.
Location of reinforcement, connectors, and prestressing tendons and anchorages	<input type="checkbox"/> Continuous	<input checked="" type="checkbox"/> Periodic	Verify that reinforcement is placed in accordance with Article 3.4 of TMS-602. Prestressing tendons shall be placed per Article 3.6 A.
Prestressing technique	<input type="checkbox"/> Continuous	<input checked="" type="checkbox"/> Periodic	Verify that prestressing technique complies with Article 3.6 B of TMS-602.
Properties of thin-bed mortar for AAC masonry	<input type="checkbox"/> Continuous	<input checked="" type="checkbox"/> Periodic	Verify that mortar complies with Article 2.1 C of TMS-602.
PRIOR TO GROUTING (TABLE 3.1.2, TMS-402/ACI 530-13):			
Grout space	<input type="checkbox"/> Continuous	<input checked="" type="checkbox"/> Periodic	Verify that grout space is free of mortar droppings, debris, loose aggregate, and other deleterious materials and that cleanouts are provided per Article 3.2 D and 3.2 F of TMS-602. <i>Continuous inspection is required for Risk Category IV buildings.</i>
Grade, type, and size of reinforcement and anchor bolts, and prestressing tendons and anchorages	<input type="checkbox"/> Continuous	<input checked="" type="checkbox"/> Periodic	Verify that reinforcement, joint reinforcement, wall ties, anchor bolts and veneer anchors comply with the approved construction documents and Section 1.6 of TMS 402.
Placement of reinforcement, connectors, and prestressing tendons and anchorages	<input type="checkbox"/> Continuous	<input checked="" type="checkbox"/> Periodic	Verify that reinforcement, joint reinforcement, wall ties, anchor bolts and veneer anchors are installed in accordance with the approved construction documents and Articles 3.2 E, 3.4, and 3.6 A of TMS 602. <i>Continuous inspection is required for Risk Category IV buildings.</i>
Proportions of site-prepared grout and prestressing grout for bonded tendons	<input type="checkbox"/> Continuous	<input checked="" type="checkbox"/> Periodic	Verify that grout is proportioned per ASTM C 476 and has a slump between 8-11 inches. Self-consolidated grout shall not be proportioned onsite. (see Articles 2.6 B and 2.4 G.1.b of TMS 602.) <i>Continuous inspection is required for Risk Category IV buildings.</i>
Construction of mortar joints	<input type="checkbox"/> Continuous	<input checked="" type="checkbox"/> Periodic	Verify that mortar joints are placed in accordance with Article 3.3 B of TMS 602.
DURING MASONRY CONSTRUCTION (TABLE 3.1.2, TMS-402/ACI 530-13):			
Size and location of structural elements	<input type="checkbox"/> Continuous	<input checked="" type="checkbox"/> Periodic	Verify the locations of structural elements with respect to the approved plans and confirm that tolerances meet the requirements of Article 3.3 F of TMS 602.
Type, size, and location of anchors, including other details of anchorage of masonry to structural members, frames, or other construction.	<input type="checkbox"/> Continuous	<input checked="" type="checkbox"/> Periodic	Verify that correct anchorages and connections are provided per the approved plans and Sections 1.16.4.3 and 1.17.1 of TMS 402. <i>Continuous inspection is required for Risk Category IV buildings.</i>
Welding of reinforcement	<input checked="" type="checkbox"/> Continuous	<input type="checkbox"/> Periodic	
Preparation, construction, and protection of masonry during cold weather (<40°F) or hot weather (>90°F).	<input type="checkbox"/> Continuous	<input checked="" type="checkbox"/> Periodic	Verify that cold-weather construction is performed in accordance with Article 1.8 C of TMS 602 and hot weather construction per Article 1.8 D of TMS 602.
Application and measurement of prestressing force	<input checked="" type="checkbox"/> Continuous	<input type="checkbox"/> Periodic	



Placement of grout and prestressing grout for bonded tendons is in compliance	<input checked="" type="checkbox"/> Continuous	<input type="checkbox"/> Periodic	
Placement of AAC masonry units and construction of thin-bed mortar joints	<input type="checkbox"/> Continuous	<input checked="" type="checkbox"/> Periodic	Verify that mortar is placed in accordance with Article 3.3 B.8 of TMS-602.
Observation of grout specimens, mortar specimens, and/or prisms	<input type="checkbox"/> Continuous	<input checked="" type="checkbox"/> Periodic	Confirm that specimens/prisms are performed as required by Article 1.4 of TMS-602. <i>Continuous inspection is required for Risk Category IV buildings.</i>
MINIMUM TESTING:			
Verification of Slump Flow and Visual Stability Index (VSI) for self-consolidating grout	<input type="checkbox"/> Continuous	<input checked="" type="checkbox"/> Periodic	Compressive strength tests should be performed in accordance with ASTM C 1019 for slump flow and ASTM C 1611 for VSI.
Verification of f'_m and f'_{AAC}	<input type="checkbox"/> Continuous	<input checked="" type="checkbox"/> Periodic	Determine the compressive strength for each wythe by the "unit strength method" or by the "prism test method" as specified in Article 1.4 B of TMS 602 prior to construction. <i>For Risk Category IV buildings this should be verified at every 5,000ft² of construction.</i>
Verification of proportions of materials in premixed or pre-blended mortar and grout	<input type="checkbox"/> Continuous	<input checked="" type="checkbox"/> Periodic	Verify that proportions for mortar meet ASTM C 270 and proportions for grout meet ASTM C 476. This applies to <i>Risk Category IV buildings only.</i>

WOOD CONSTRUCTION (IBC 1705.5, 1705.11.1 & 1705.12.2)

<i>Item</i>	<i>Detailed Instructions and Frequencies</i>		
High-load diaphragms	<input type="checkbox"/> Continuous	<input checked="" type="checkbox"/> Periodic	Verify thickness and grade of sheathing, size of framing members at panel edges, nail/staple diameters and length, and the number of fastener lines and fastener spacing per approved plans. <i>Performed by code inspection firm.</i>
Wood trusses spanning > 60-feet	<input type="checkbox"/> Continuous	<input checked="" type="checkbox"/> Periodic	Verify that temporary and permanent truss bracing is installed in accordance with approved truss package. <i>Performed by code inspection firm.</i>
Structural wood	<input type="checkbox"/> Continuous	<input checked="" type="checkbox"/> Periodic	If fastener spacing is < 4"o.c.: Verify that proper nailing, bolting, anchoring and other fastening of shear walls, diaphragms, drag struts, braces, and holdowns. <i>Performed by code inspection firm.</i>

SOILS CONSTRUCTION (IBC 1705.6)

<i>Item</i>	<i>Detailed Instructions and Frequencies</i>		
Verify subgrade is adequate to achieve design bearing capacity	<input type="checkbox"/> Continuous	<input checked="" type="checkbox"/> Periodic	Prior to placement of concrete.
Verify excavations extend to proper depth and material	<input type="checkbox"/> Continuous	<input checked="" type="checkbox"/> Periodic	Prior to placement of compacted fill or concrete.
Verify that subgrade has been appropriately prepared prior to placing compacted fill	<input type="checkbox"/> Continuous	<input checked="" type="checkbox"/> Periodic	Prior to placement of compacted fill.
Perform classification and testing of compacted fill materials	<input type="checkbox"/> Continuous	<input checked="" type="checkbox"/> Periodic	All materials shall be checked at each lift for proper classifications and gradations not less than once for each 10,000ft ² of surface area.



Verify proper materials, densities and lift thicknesses during placement and compaction.	<input checked="" type="checkbox"/> Continuous	<input type="checkbox"/> Periodic	
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DRIVEN DEEP FOUNDATIONS (IBC 1705.7)

<i>Item</i>			<i>Detailed Instructions and Frequencies</i>
Verify materials, sizes and lengths	<input checked="" type="checkbox"/> Continuous	<input type="checkbox"/> Periodic	
Determine capacities and conduct necessary load tests	<input checked="" type="checkbox"/> Continuous	<input type="checkbox"/> Periodic	
Observe drilling operations	<input checked="" type="checkbox"/> Continuous	<input type="checkbox"/> Periodic	
Verify placement locations & plumbness, confirm type & size of hammer, record number of blows per foot, record tip and butt elevations and document any damage to element	<input checked="" type="checkbox"/> Continuous	<input type="checkbox"/> Periodic	
Perform additional inspections for steel, concrete or other specialty elements.	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic	Steel per IBC 1705.2 Concrete per IBC 1705.3 Specialty items per registered design professional

CAST-IN-PLACE DEEP FOUNDATIONS (IBC 1705.8)

<i>Item</i>			<i>Detailed Instructions and Frequencies</i>
Observe drilling operation and reporting	<input checked="" type="checkbox"/> Continuous	<input type="checkbox"/> Periodic	
Verify placement locations & plumbness, confirm element diameters, lengths, embedment and adequate end-bearing capacity. Record concrete or grout volumes.	<input checked="" type="checkbox"/> Continuous	<input type="checkbox"/> Periodic	
Perform additional inspections for concrete elements.	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic	Concrete per IBC 1705.3

HELICAL PILE FOUNDATIONS (IBC 1705.9)

<i>Item</i>			<i>Detailed Instructions and Frequencies</i>
Record installation equipment used, pile dimensions, tip elevations, final depth, and final installation torque	<input checked="" type="checkbox"/> Continuous	<input type="checkbox"/> Periodic	
Verify that helical piles used match the approved submittal	<input checked="" type="checkbox"/> Continuous	<input type="checkbox"/> Periodic	

SPRAYED FIRE-RESISTANT MATERIALS (IBC 1705.14)

<i>Item</i>			<i>Detailed Instructions and Frequencies</i>
Surface preparation	<input type="checkbox"/> Continuous	<input checked="" type="checkbox"/> Periodic	Prior to application confirm that surface has been prepared per the approved fire-resistance design and manufacturer's instructions.



Material thickness	<input type="checkbox"/> Continuous	<input checked="" type="checkbox"/> Periodic	Samples shall be taken from selected floor, roof and wall assemblies and structural members. No more than 10% of the samples shall be less than the thickness required by the fire-resistance design.
Material density	<input type="checkbox"/> Continuous	<input checked="" type="checkbox"/> Periodic	Density tests shall be performed in accordance with ASTM E 605 for every 2,500ft ² of floor, roof or wall area. One sample must also be provided for each beam, girder, truss or column at each story.
Bonding strength	<input type="checkbox"/> Continuous	<input checked="" type="checkbox"/> Periodic	Bond strength tests shall be performed in accordance with ASTM E 736 for every 2,500ft ² of floor, roof or wall area. One sample must also be provided for each beam, girder, truss or column at each story. The bond strength shall not be less than 150psf.

MASTIC AND INTUMESCENT FIRE-RESISTANT COATINGS (IBC 1705.15)

<i>Item</i>			<i>Detailed Instructions and Frequencies</i>
Surface preparation	<input type="checkbox"/> Continuous	<input checked="" type="checkbox"/> Periodic	Prior to application confirm that surface temperature and substrate are acceptable and that a compatible primer is used in accordance with AWCI 12-B.
Thickness	<input type="checkbox"/> Continuous	<input checked="" type="checkbox"/> Periodic	Record thickness of primer or other existing coating on substrate prior to application of coating. Final thickness of coating must be verified in multiple locations prior to applying top coat per AWCI 12-B.

EXTERIOR INSULATION AND FINISH SYSTEMS (EIFS) (IBC 1705.16)

<i>Item</i>			<i>Detailed Instructions and Frequencies</i>
Material and installation	<input type="checkbox"/> Continuous	<input checked="" type="checkbox"/> Periodic	Verify that water-resistive barrier, complying with ASTM E 2570, is installed appropriately over a sheathing substrate. <i>(Not required if applied over concrete, masonry, or if a means of draining moisture to exterior is provided.)</i> Performed by code inspection firm.

FIRE-RESISTANT PENETRATIONS AND JOINTS (IBC 1705.17)

➤ Only required for high-rise buildings or those assigned to Risk Category III or IV per IBC Table 1604.5.

<i>Item</i>			<i>Detailed Instructions and Frequencies</i>
Penetration firestops	<input type="checkbox"/> Continuous	<input checked="" type="checkbox"/> Periodic	Listed systems shall be inspected in accordance with ASTM E 2393.
Fire-resistant joint systems	<input type="checkbox"/> Continuous	<input checked="" type="checkbox"/> Periodic	Listed systems shall be inspected in accordance with ASTM E 2393.

SMOKE CONTROL (IBC 1705.18)

<i>Item</i>			<i>Detailed Instructions and Frequencies</i>
Verify device locations and perform leakage testing	<input type="checkbox"/> Continuous	<input checked="" type="checkbox"/> Periodic	During erection of ductwork and prior to concealment. As defined by rational analysis.
Pressure difference testing, flow measurements and detection and control verification	<input type="checkbox"/> Continuous	<input checked="" type="checkbox"/> Periodic	Prior to occupancy and after sufficient completion. As defined by rational analysis.



ARCHITECTURAL COMPONENTS (IBC 1705.12.5)

➤ Only required for buildings located within Seismic Design Category D, E, or F.

<i>Item</i>	<i>Detailed Instructions and Frequencies</i>		
Erection and fastening of exterior cladding or interior and exterior veneers	<input type="checkbox"/> Continuous	<input checked="" type="checkbox"/> Periodic	Verify appropriate materials, fasteners and attachment at commencement of work and at completion. Performed by code inspection firm. (Not required if < 30 feet or less than 5psf).
Erection and fastening of interior and exterior nonbearing walls	<input type="checkbox"/> Continuous	<input checked="" type="checkbox"/> Periodic	Verify appropriate materials, fasteners and attachment at commencement of work and at completion. Performed by code inspection firm. (Not required if < 30 feet or for interior walls < 15psf).
Access floors	<input type="checkbox"/> Continuous	<input checked="" type="checkbox"/> Periodic	Verify that anchorage complies with approved construction documents. Inspection of post-installed anchors shall comply with approved ICC-ES report. Performed by code inspection firm.
Storage racks	<input type="checkbox"/> Continuous	<input checked="" type="checkbox"/> Periodic	Verify that anchorage complies with approved construction documents. Inspection of post-installed anchors shall comply with approved ICC-ES report. Performed by code inspection firm.

MECHANICAL & ELECTRICAL COMPONENTS (IBC 1705.12.4, 1705.12.6 & 1705.13.2)

➤ Only required for buildings located within Seismic Design Category C, D, E, or F.

<i>Item</i>	<i>Detailed Instructions and Frequencies</i>		
Anchorage of emergency or standby power systems	<input type="checkbox"/> Continuous	<input checked="" type="checkbox"/> Periodic	Verify that anchorage complies with approved construction documents. Performed by code inspection firm.
Installation of piping systems carrying flammable, combustible or highly toxic materials	<input type="checkbox"/> Continuous	<input checked="" type="checkbox"/> Periodic	Verify that installation and restraint comply with approved construction documents. Performed by code inspection firm.
Installation of HVAC ductwork containing hazardous materials	<input type="checkbox"/> Continuous	<input checked="" type="checkbox"/> Periodic	Verify that installation and restraint comply with approved construction documents. Performed by code inspection firm.
Installation of vibration isolation systems having a clearance of $\leq 1/4$ "	<input type="checkbox"/> Continuous	<input checked="" type="checkbox"/> Periodic	Verify that installation complies with approved construction documents and manufacturer's recommendations. Performed by code inspection firm.
Designated seismic systems	<input type="checkbox"/> Continuous	<input checked="" type="checkbox"/> Periodic	Confirm that manufacturer's certificate of compliance conforms to the requirements of Section 13.2 of ASCE 7-10. Verify that the label, anchorage or mounting conforms to the manufacturer's certificate of compliance. Performed by code inspection firm.

SEISMICALLY ISOLATED STRUCTURES (IBC 1705.12.8 & 1705.13.4)

<i>Item</i>	<i>Detailed Instructions and Frequencies</i>		
Prototype tests	<input type="checkbox"/> Continuous	<input checked="" type="checkbox"/> Periodic	Prototype tests shall be performed on selected samples prior to construction in accordance with Section 17.8 of ASCE 7-10.
Fabrication and installation	<input type="checkbox"/> Continuous	<input checked="" type="checkbox"/> Periodic	Verify that fabrication and installation of isolator units and energy dissipation devices conform to manufacturer's recommendations and approved construction documents.



SPECIAL CASES (IBC 1705.1.1) – material alternatives or unusual design applications

<i>Item</i>			<i>Detailed Instructions and Frequencies</i>
Material and installation	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic	Per design professional in responsible charge or report from an accepted accreditation agency (i.e. ICC-ES).

MISCELLANEOUS AREAS

➤ *These inspections may be recommended by the Architect/Engineer and are to be approved by DFCM.*

<i>Item</i>			<i>Detailed Instructions and Frequencies</i>
Suspended Acoustical Ceilings	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic	<i>Performed by code inspection firm.</i>
Soil backfill (specify locations and frequency)	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic	
Soils for curb and gutter (specify locations and frequency)	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic	
Soils for parking lots (specify locations and frequency)	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic	
Soils for utility trench backfill	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic	
Reinforcement for slab on grade sidewalks and drive approaches (specify locations and frequency)	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic	
Reinforcement for interior slab on grade (specify locations and frequency)	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic	
Concrete testing for slab on grade sidewalks and drive approaches (specify locations and frequency)	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic	
Concrete testing for interior slab on grade (specify locations and frequency)	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic	
Asphalt inspection (specify locations and frequency)	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic	
Asphalt testing (specify locations and frequency)	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic	
Steam and water line welding (specify locations and frequency)	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic	
Seismic supports for duct work and sealing of joints for duct work	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic	
Seismic supports for electrical raceways, cable trays and lights	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic	
Seismic supports for plumbing lines including gas, water and steam and condensation	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic	
Seismic bracing for mechanical units both on slab and suspended	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic	
	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic	
	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic	
	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic	
	<input type="checkbox"/> Continuous	<input type="checkbox"/> Periodic	



Special Inspectors Shall:

- Be approved by the Building Official prior to performing any duties;
- Provide proof of licensure as a special inspector by the State of Utah for each type of inspection;
- Inspection reports are to meet the requirements of IBC 1704.2.4 and DFCM standards;
- Inspection reports are to be submitted to the code consultant, architect, DFCM project manager, and the State of Utah Building Official within 48 hours of performing inspections;
- A final inspection report shall be submitted following completion of the project documenting the types of special inspections performed and a statement indicating that the structure is in compliance with the approved construction documents and applicable codes (see IBC 1704.2.4).

Last Revised: 10/2016



STRUCTURAL OBSERVATIONS (IBC 1704.6)

<i>Item</i>	<i>Proposed Frequency</i>	<i>Name of Structural Observer</i>
Footings & Piers	<input type="checkbox"/> Required	
Mat Foundations	<input type="checkbox"/> Required	
Deep Foundations	<input type="checkbox"/> Required	
Grade Beams	<input type="checkbox"/> Required	
Concrete Walls	<input type="checkbox"/> Required	
Masonry Walls	<input type="checkbox"/> Required	
Wood Walls	<input type="checkbox"/> Required	
Steel Moment Frames	<input type="checkbox"/> Required	
Steel Braced Frames	<input type="checkbox"/> Required	
Concrete Moment Frames	<input type="checkbox"/> Required	
Concrete Diaphragms	<input type="checkbox"/> Required	
Steel Deck Diaphragms	<input type="checkbox"/> Required	
Wood Diaphragms	<input type="checkbox"/> Required	
Post-tensioned Deck	<input type="checkbox"/> Required	
Other:	<input type="checkbox"/> Required	

Structural Observer's Shall:

- Provide proof of licensure as a licensed professional/structural engineer by the State of Utah;
- If structural observations are performed by individuals other than the design professional in responsible charge, they should first be approved by the Building Official.
- At the conclusion of work a final structural observation report must be submitted to the Building Official noting any deficiencies which, to the best of the structural observer's knowledge, have not been resolved (see IBC 1704.6).

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