

Standard Specification For Installation of NOCOM® Over Steel Framing for Floors

5/8/24

SECTION 06100

1. GENERAL

1.01 SUMMARY OF WORK

- A. Materials shall be NOCOM® Cement Board
- B. All NOCOM® shall be selected from the manufacturer's load tables to carry the project live load design over a maximum of 24" on center support spacing while limiting deflection to a maximum of L/360 as determined by project architect & engineer.
- C. NOCOM® to be of minimum thickness ¾" (18mm) and 4' x 8' (1220mm x 2440mm) dimension.
- D. Comply with applicable building codes for wind, seismic, vibration, snow, concentrated, impact and uniformly distributed live-loads and other loading requirements as determined by the project architect and engineer.

1.02 RELATED WORK SPECIFIED ELSEWHERE

- A. Section 05200, Metal Joists
- B. Section 05400, Cold-Formed Metal Framing
- C. Section 06100, Rough Carpentry
- D. Section 09100, Metal Support Assemblies
- E. Section 09300, Tile
- F. Section 09600, Flooring

1.03 DESCRIPTION OF NOCOM®

- A. NOCOM® is a structural cementitious sub-floor mechanically fastened to the top of floor framing members.
- B. NOCOM® is load bearing and shall have underlayments, toppings and finishes applied over it.

1.04 SUBMITTALS

- A. Submit to the project architect or design professional a copy of NOCOM® product and installation specifications and one product sample measuring 2" x 2" minimum.

1.05 QUALITY ASSURANCE

- A. Contractor shall have successfully installed products of a similar type as this project. These past projects shall have resulted in construction with a record of successful in-service performance.
- B. At frequent intervals during construction, the jobsite will be visited by the owner's representative, general contractor or construction manager to confirm NOCOM® is installed per this specification.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. NOCOM® is typically delivered to site on factory pallets bound with plastic sheet protection, edge protection, and wooden pallets to facilitate forklift handling.
- B. NOCOM® must be stored above 0° F, and on leveled dunnage not exceeding 32" on centers at all times. NOCOM® shall be stored indoors. If temporarily stored outdoors boards must be kept dry. Elevate above ground and protect from the weather with waterproof covering. Stacking of pallets should always be on a solid stable base and never be stacked higher than 5 pallets high.
- C. Acclimatize NOCOM® by storing on site not less than three days prior to installation.
- D. All materials supplied by others shall be delivered and stored according to their instructions.

- E. Upon delivery, inspect materials for signs of damage during transportation and mark paperwork accordingly at time of delivery. Failure to note damages during delivery will result in the rejection of any claims for damage after delivery.
- F. Deliver, store & handle materials to prevent breakage, warping or damage caused by moisture.
 - 1. When transporting loose NOCOM[®] panels by truck they must be laid flat and fully protected against edge damage and protected from weather with waterproof covering.
 - 2. When hand carrying single NOCOM[®] panels they must be carried on edge with the short side held vertically.
 - 3. Handle NOCOM[®] with care, improper handling can damage NOCOM[®].
- G. Damaged or deteriorated materials shall be removed from the premises.
- H. Material Safety Data Sheets shall be available for all materials.

1.07 PROJECT CONDITIONS

- A. Framing to receive NOCOM[®] shall be structurally sound, free from bows, twists or other malformations, installed correctly, and in compliance with local building code requirements and project specifications. Damaged or incorrect framing shall be replaced before installation of NOCOM[®]. Refer to Section 3.01.
- B. During installation of NOCOM[®] the temperature shall be above 0° F. Do not install boards that are frozen or contain frost. If adhesive is being used temperature shall be in compliance with limitations of adhesive manufacturer.
- C. Prior to the application of toppings, underlayments and finished flooring, NOCOM[®] must be conditioned at the same temperature and conditions as required by each respective product manufacturer for at least 48 hours. Toppings, underlayments and finishes shall not be applied over NOCOM[®] that is wet, frozen or contains frost.
- D. NOCOM[®] shall be regularly cleared of snow, ice and standing water during open jobsite conditions. Use caution not to gouge, scrape or damage NOCOM[®].
- E. **Do not use salt or other chemicals for anti or de-icing purposes.**
- F. **Exposure to elements in Climate Zones 6, 7 & 8 shall be limited to 90 days, otherwise exposure is limited to 180 days. Climate Zones as determined by IECC at time of install.**

1.08 SEQUENCE AND SCHEDULING

- A. Sequence the installation of NOCOM[®] with related work specified in other sections to ensure that the floor assemblies are protected against damage or abuse during and after construction.
- B. Provide sufficient labor and equipment to properly install all materials.

2. PRODUCTS

2.01 MATERIALS

- A. Floor Framing: Cold formed steel with minimum G-60 galvanized coating, minimum 16 gauge, with minimum 1-5/8" flange, meeting AISI and ASTM specifications and requirements for use in a structural floor system. Follow manufacturer's installation instructions.
- B. Floor Framing Alternative: Truss System: Prefabricated light gauge steel truss system consisting of cold-formed steel chord and web sections. Minimum G60 galvanized coating, minimum 20g, with minimum 1-5/8" flange. Trusses fabricated in various sizes, depths and from various steel thicknesses as determined by project architect and/or engineer's specifications. Cold formed steel truss system meeting AISI and ASTM specifications and requirements for use in a structural floor system. Loading and deflection criteria are project specific. Deflection criteria per the building designer's requirements.
- C. Floor Sheathing: Minimum 18mm (3/4") thick NOCOM[®] x 4' x 8', ship-lap or tongue & groove on 8' edges unless otherwise noted. If construction site is open to the elements for an extended period NOCOM[®] with factory-applied sealer shall be ordered to reduce water absorption during construction.

- D. Adhesives: Use PEMCO 5100 non-flammable, solvent free, zero V.O.C., polyurethane adhesive as manufactured by Alpha Systems, Inc., Elkhart, IN (or equal). Follow manufacturer's installation instructions.
- E. Fasteners: For steel framing members 20g to 12g use corrosion resistant self-countersinking head screws such as Grabber Part No. CGH8158LG, or equal. Fasteners to be minimum #8 diameter with self-boring (winged), self-drilling points. Maximum fastener diameter shall be #10 unless approved by project architect or engineer. Length of fastener to equal 2 to 3 times the board thickness. Follow manufacturer's installation instructions. For framing members not covered by this section, please contact your sales rep for fastener alternatives.
- F. Sealer: Use alkaline-resistant masonry sealers compatible with PH 11 or greater such as Sherwin Williams Loxon XP, or equal.

3. EXECUTION

3.01 FRAMING

- A. The floor joists and other floor framing components must be designed to meet the strength and deflection criteria as determined by project architect & engineer and specified in the contract documents.
- B. The attachment flange or bearing edge shall be a minimum 1-5/8" wide, or doubled up at NOCOM[®] board edges.
- C. Framing members per 2.01.A shall be a minimum 16 gauge. Framing members per 2.01.B (prefabricated floor truss systems) shall be a minimum 20g.
- D. Metal framing shall be spaced a maximum of 24" on center.
- E. Structural framing support shall be installed under partitions running parallel to the joists.
- F. Plan framing so that all board edges are supported by structural framing, or glued interlocking T&G (or glued interlocking ship-lap) joint.
- G. Review panel layout, in all cases where panels are less than 24" wide, including stairs, panels shall receive structural framing support such as blocking on all edges. Strapping is not sufficient.
- H. Structural cross blocking or framing support shall be installed between floor joists at perimeters of toilet flanges, floor drains, openings greater than 4" in any direction, groups of smaller penetrations within 4" of each other, and any smaller penetrations that are subject to concentrated or heavy loading.
- I. All blocking or bridging must be installed prior to the installation of NOCOM[®]. Bridging must be installed on the bottom and top of the joists prior to installing NOCOM[®].
- J. All metal framing connections to receive NOCOM[®] shall use low-profile fastener heads or welding on the top flange. Use of protruding fastener heads in excess of 1/16" can damage the NOCOM[®] panel. This shall include fasteners coming into contact with NOCOM[®] at all joists, track, girders, beams, bracing, blocking, bridging, etc.
- K. Fasteners shall be driven flush with the framing
- L. Framing system to receive NOCOM[®] shall be in plane, and flat to 1/16" over a 4' span. Areas where flatness varies greater than 1/16" shall utilize shimming or other methods to maintain this requirement.
- M. Framing must be of good quality, free of bows, twists, sags or other malformations. Plan accordingly for expansion joints.

3.02 STRUCTURAL PANEL SHEATHING APPLICATION

- A. Before installing NOCOM[®]:
 - 1. Review installation specifications with the installers so they understand how to handle and install NOCOM[®] correctly, and how to work safely with this product during and after installation.

2. Plan ahead where to install sacrificial wear surfacing such as plywood in areas of high traffic and abuse to prevent damage to the NOCOM[®] during and after installation. Notify subsequent trades to also protect floors of excessive loading and abuse.
- B. Inspect for damage to the panels such as cracks, breaks, edge damage, etc that may have occurred during handling. Do not install panels that have been damaged.
 - C. Inspect for correct thickness, dimension & finish before installation. Do not install panels that do not match as required by the specifications.
 - D. Panels shall be cut to size with a circular saw equipped with carbide tipped or cement cutting blade and a dry dust collection device or a water-dispensing device that limits the amount of airborne dust. Wear safety glasses and a NIOSH approved dust mask when cutting the panel. Collected dust shall be disposed in a safe manner and in compliance with local, state and federal ordinances.
 - E. NOCOM[®] shall be installed with the long edges perpendicular to the framing. Panels shall be installed with calibrated side facing up (smooth, non-calibrated side facing down against framing).
 - F. Remove all debris from joists, attachment flanges. Check that all fasteners of the framing have been fully driven and flush with the metal framing.
 - G. Plan the layout so first and last panel rows are a minimum 24" wide. In all cases where panels are less than 24" wide, including stairs, panels shall be installed onto structural framing support such as blocking on all edges. Strapping is not sufficient.
 - H. All board edges must be supported by structural framing or glued interlocking shiplap / T&G joint.
 - I. Start the first panel with the cut edge or tongue along the rim joist. Place each panel across three or more supports. Cut panel to length as needed to ensure butt ends are centered on the framing member.
 - J. Use adhesive at all board joints to enhance the connection strength of adjacent NOCOM[®] panels. Follow adhesive manufacturer's product and installation instructions. Carefully apply a 1/4-3/8" diameter bead of adhesive to the joint of the installed panel. Only apply enough adhesive to bond the edges of the panels being joined.
 - K. Fasten each panel to metal framing after it has been placed using the following fastening schedule, note that alternative fastener schedule may be required to comply with fire-rated and/or diaphragm testing:
 1. Fastener placement shall be a maximum of 12" on center, and a minimum of 6" on center along all supports at panel joints and edges.
 2. Fastener placement shall be a maximum of 16" on center along all supports in the field of the panel.
 3. Fastener placement shall be a minimum 1/2" from all panel edges.
 4. Corner fasteners shall be a minimum 2" from all panel corners.
 5. Do not place one screw in the corner.
 6. Do not place two screws equidistant from the corner (45 degree placement).
 7. Off-set corner fasteners by placing 2" from the corner on one edge, and 4" from the corner on the adjacent edge, while maintaining appropriate edge set-back.
 8. Begin fastening at one end of the panel and fan out across the panel. Do not fasten all the corners first.
 9. Drive fasteners so the heads are flush with the surface of the board.
 - L. After installing one complete row of panels begin the next row. Slide panels together so that the tongue of the panel being installed fits into the groove of the installed panel. Install all rows in a running bond pattern so that end joints fall over the center of the framing members and are staggered by at least two supports from where the end joints fall in the adjacent rows. Do not force panels together
 - M. Cutouts in the panels should be made before installing the panel whenever possible. If a cutout is required after the panel is installed, set the depth of the saw blade to ensure that the framing is not scored. Refer to 3.01.H.

3.03 CLEAN-UP

- A. Left over material shall be removed from the job site.
- B. Remove foreign material from floor surface and vacuum all dust from the surface.

3.04 SAFETY

- A. Avoid concentrated point loads and impact loads on NOCOM[®] by referring to concentrated load tables and as determined by project architect & engineer. Pay close attention to staging areas for building materials and/or equipment such as masonry units, hoists, framing members, sheet goods, ladders, scaffolding, tool boxes, etc.
- B. Measures shall be taken to distribute concentrated and point loads on the deck system during construction such as the utilization of pallets, dunnage, and/or structural building panels such as plywood or OSB laid over multiple spans.
- C. Workers must take extra care to avoid impacts such as dropped masonry units, framing members, scrap material, tools, equipment, etc. Such impacts can cause deforming marks or even penetrations if dropped onto the sheathing surface of these panels and will need repair.
- D. **Areas that are subject to construction traffic and abuse shall be protected with sacrificial panels such as plywood / OSB until these activities have completed.**

3.05 UNDERLAYMENTS & FLOOR FINISH

- A. NOCOM[®] will exhibit some natural expansion and contraction during conditioning.
- B. Before the application of floor finish materials, ensure that all panels are properly installed with the fastener head driven flush or slightly below the surface of the panels, and that the system is level and in appropriate condition to apply finishes.
- C. Fill all voids, depressions and gaps at board joints with compatible patching or leveling compounds. Treat any areas of the floor, including joints, as required by the manufacturer of the floor finish or underlayment.
- D. Be sure that floor system is dry, and has been under end-use HVAC conditioning for a minimum 48 hours or longer as required by each respective floor finish material manufacturer.
- E. NOCOM moisture levels should be within the acceptable range of floor finish manufacturers requirements prior to installation. Test NOCOM for moisture allowing time as needed to reach desired levels.
- F. Plan accordingly for expansion joints as required by floor underlayment, topping & finish manufacturers.
- G. Questions or conflicts arising between manufacturer installation instructions of any floor finish, underlayment, topping or accessory to those of NOCOM[®] should be directed to a NOCOM[®] technical rep before proceeding with any specification or installation.
- H. Be sure that floor design and conditioning is appropriate for each finish, including joist spacing, underlayments, installation methods, application, deflection, point loading, dead & live loading, abuse, impact loading, environment, etc.
- I. NOCOM[®] subfloor installations in areas routinely washed and wet, such as commercial kitchens, exterior balconies, etc. should have an additional layer of a waterproof membrane complying with ANSI A118.10 or as otherwise defined and approved by local building code.
- J. Any finishes or components not addressed in this specification shall be discussed with a NOCOM[®] technical representative for review before proceeding with specification or installation.
- K. **CARPET & PAD:**
 - 1. Carpet should be installed using tackless strips designed for the installation of stretched carpet. Attach tackless carpet strips to NOCOM[®] decking with **BOTH** adhesive and screwed through the deck with a coated, self-tapping, self-countersinking screw.

2. Use an adhesive suitable for the adhesion of tackless carpet strips to concrete subfloor. Follow adhesive manufacturer's instructions on how it should be applied.
3. Use a minimum #8, self-tapping, self-countersinking screw coated for corrosion resistance to attach tackless carpet strips through NOCOM[®]. Screw length shall be long enough to accommodate subfloor assembly while allowing a minimum 3 exposed threads protruding through the thickness of a steel joist should one be engaged.
4. Finally install pad and carpet per manufacturer's instructions.

L. PLANK HARDWOOD FLOORING:

1. First ensure the NOCOM[®] is kept dry and maintained in a conditioned space for the minimum requirements of the underlayment and plank hardwood wood flooring manufacturer. Once conditions are met, first install a nailable underlayment such as ½" plywood or thicker over NOCOM[®] as approved by the hardwood flooring manufacturer. Position underlayment panels perpendicular to the direction of the NOCOM[®] panels, in a staggered joint pattern, and off-set joints a minimum 8" from NOCOM[®] joints. Attach underlayment using **BOTH** adhesive and screws as follows:
2. Use an adhesive suitable for the adhesion of plywood underlayment to masonry subfloor. Follow adhesive manufacturer's instructions on how to apply for bonding of underlayment.
3. Drill screws spaced a minimum of 12" on center along edges, and in the field, in all directions (no closer than 12" o.c.). Fan screws out from one corner. Do not install four corners first. Use a minimum #8, self-tapping, self-countersinking screw coated for corrosion resistance to attach underlayment through NOCOM[®]. Screw length shall be long enough to accommodate subfloor assembly while allowing a minimum 3 exposed threads protruding through the thickness of a steel joist should one be engaged.
4. Finally install a layer of building paper over the underlayment, or as otherwise approved by hardwood flooring manufacturer prior to applying the wood flooring. Once subfloor and underlayment are properly installed and prepared install plank hardwood flooring per manufacturer instructions.

M. ENGINEERED / LAMINATE WOOD FLOORING:

First ensure the NOCOM[®] is kept dry and maintained in a conditioned space for the minimum requirements of the underlayment and engineered wood flooring manufacturers. Once conditions are met install underlayments and moisture barriers as recommended for the engineered wood flooring system. Follow the finish flooring manufacturer's installation instructions.

N. VINYL / LINOLEUM FLOORING:

For the installation of vinyl or linoleum flooring first install a minimum ¼" thick underlayment attached to NOCOM[®] in accordance with the underlayment manufacturer's installation instructions. Follow the finish flooring manufacturer's installation instructions.

O. CERAMIC / PORCELAIN TILE:

For the installation of ceramic or porcelain tile first install a minimum ¼" thick tile backer board attached to NOCOM[®] in accordance with tile-backer board manufacturer's installation instructions. Follow the finish flooring manufacturer's installation instructions. Note sections 3.05.G & 3.05.H.

END OF SECTION