Canadian Sheet Steel Building Institute

Sheet Steel Facts 11

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Project Take-off Check List

This check list is an itemized review of the tender documents to do a take-off in preparation for bidding. The items have been listed here to help avoid errors and omissions in this process. It is important not to confuse this procedure with the bidding process.

Initial Review of Tender Documents

Project Name:
Site Address:
City/Prov:

Architect Name:
Address:
City/Prov:
Phone Number:

Structural Consultant:
Address:
City/Prov:
Phone Number:

Tender drawing numbers c/w dates and revision numbers:

Specifications Review: (Make photocopies if needed)

Instruction to Bidders:

General Conditions:
- Liquidated damage clauses
- Limited liability clauses
- Special insurance requirements
- Tax exemption statements
- Method of payment clauses
- Hold backs
- Penalty clauses
- Warranty clauses

Supplemental General Conditions:
- Loading/unloading permits and restrictions (overhead wires)

Pertinent Sections:
- Roof Deck (Usually-05300)
- Floor Deck (Usually-05300)
- Metal Cladding (Usually-07400)
- Architectural Porcelain

Other associated sections as listed in the above sections under related work:

Addenda - Numbers and issue dates:

Tender Closing Date:

Construction Schedule:
- Start date
- Completion date
- Phasing
- When possible get dates related to our section of work

General Items of Consideration for all Products

Bonding:
- Bid bonds required
- Performance bonds required
- Material & labour bond required
- Hold backs

Nature of the Bid:
- Supply only (lump sum or unit price)
- Supply and install (lump sum or unit price)
- Supply only of materials within an S & I contract such as roofer cap flats, acoustic insulation strips; etc.

Are we to act as a subcontractor to a general or are we to be a general contractor to an EPC account or the owner?

Drawing Deposit:
- When must drawings be returned to guarantee return of deposit cheque?

Governing Codes of Practice:
- Canadian General Standards Board (CGSB)
- Canadian Standards Association (CSA)
- Canadian Sheet Steel Building Institute (CSSBI)
- Factory Mutual (FM) (check gauge and spacing requirements for FM specifications)
- National Building Code (NBC)
- Underwriters Laboratories of Canada (ULC)

Are shop drawings required to be stamped by an engineer?

Job-site Accessibility:
- Local (Urban location)
- Out-of-town (Urban location)
- Remote site location (Bush site)

Use of General Contractors Equipment:
- Tower cranes on hi-rise buildings either at a specified cost to be carried in the contract price or at no cost based on an approximate number of hoisting hours
- Scheduling tower cranes
- Cranes or fork lift trucks to unload materials on remote job-sites at a specified rate
- Power: available and sufficient?

Sample panels:
- Full size for approval?

Any Testing Required:
- Acoustic assemblies
- Thermal properties
- Structural testing of shear studs (in place)
- Who pays for such testing?

Freights:
- Methods of transport (26'-pup / 45' - trailer / 140M - rail car)
- Number of trucks vs weight (some products bulk-out before maximum weight is loaded)

Roof Deck Specification Requirements and Drawing Scrutiny

A. Type of Bid

Supply only:
- Commodity product

Supply only:
- Including engineering drawings

Supply and install:
- Own forces
- Outside installation forces

Lump sum or unit prices.

B. Products

Profile(s):
- Thickness & finish (for each)

Acoustic Profile(s):
- Thickness & finish (for each)

Acoustic insulation strips (supply only to roofer)

Edge reinforcing of deck:
- Finishing channels

Reinforcing channels.

Flat plates:
- Change in direction of deck

Foam closures (EPT).

Notched metal closures.

Bearing plates.

Cant strips:
- At roof perimeter
- At openings in roof

Sump pans for roof drains.

Ridge and valley flashings.

Touch up paint:
- Aluminum
- Galvafroid
- Rustolium

C. Design

Roof deck design loads:
- LL and DL for deck (this should not include any DL carried by the structure).
- High/Low roof snow load design

Alternates to specs:
- Is Architectural Approval required?

Shear diaphragm design requirements.

Supporting structure:
- Standard beam/joist construction
- Wood trusses
- Concrete tees/beams
- Tubular steel (round/rectangular)

Factory Mutual requirements
- Check gauge and span requirements which may be different than the general specification

Is roof to be a future floor:
- Check both roof and floor loading capacities
- Are columns stubbed thru roof

Hanger tabs.

Standard or non-standard welding.

Screw down deck.

Straight and Skew cutting (waste allowance).

Openings in roof (check architectural / structural / & mechanical drawings):
- Cut only
- Cut and reinforce

Notching around precast support locations.

Floor Deck Specification Requirements and Drawing Scrutiny

A. Type of Bid

Supply only:
- Commodity product

Supply only:
- Including engineering drawings

Supply and install:
- Own forces
- Outside installation forces

Lump sum or unit prices.

B. Products

Non-Cellular Profile(s):
- Thickness & finish (for each)

Cellular Profile(s):
- Thickness & finish (for each)

Concrete retainer flashings:
- Perimeter of floors and openings

Edge reinforcing of deck.

Reinforcing channels.

Foam closures (EPT).

Notched metal closures.

Bearing plates.

Shear studs:
- Thru deck by our trade
- Installed on beams by steel contractor

Hanger tabs (pig-tails in concrete).

Touch up paint.

C. Design

Is the deck specified suitable for the requirements or does it need structural analysis by engineering?

Is deck composite or non-composite design?

Is deck to act as a form only (reinforcing steel in slab both ways top and bottom of slab)?

Total slab thickness / concrete strength / concrete density.

Floor slab / deck design loads (LL and DL for deck only). This should not include any DL to be carried by the floor structure.

Are there any superimposed dead loads applied to the slab (ie. quarry tile; computer floor etc.)

If cellular deck is used, are there any header ducts or trench header ducts to be considered in the design.

Alternates to specs (is Architectural Approval required?)

Shear diaphragm design requirements.

Standard or non-standard welding.

Other fastening systems.

Straight and Skew cutting:
- Waste allowance

Openings in floors:
- Check architectural / structural / mechanical drawings
- Cut only
- Cut and reinforce
- Column notches - full
- Column notches - half
- Precast support clip locations

Is additional support steel required at openings:
- By self or by others

D. Composite Beam Design

Are there shear studs specified or shown thru deck:
- On support beams
- On girder beams
- Who designs size and quantity?

Check the structural steel specification.

Is the top flange of the supporting steel to receive shear studs specified to be unpainted?

Is site inspection of the stud installation required and at whose expense?

Is there power on site for the stud welding machine:
- At what cost?
- At whose cost?

Are there any moment plates to notch around?

Safety lines around floor perimeter and around openings. Whose responsibility?

Where the studs are welded through the steel deck, the deck installer must install the studs.

Wall Cladding / Siding Specification Requirements and Drawing Scrutiny

A. Type of Bid

Supply only:
- Commodity product
- Including engineering drawings

Supply and install:
- Own forces
- Outside installation forces

B. Retrofit

Visit the site.

Conditions of sub-structure.

Insulation and vapour barrier required?

C. Products

Outer sheet profile(s):
- Thickness & finish (for each)

Insulation:
- Type and thickness specified or
- R-Value specified

Liner sheet profile(s):
- Thickness & finish (for each)

Vapour barriers:
- Mastic - trowel on type
- Membrane - Polyethylene; Peel & Stick, etc.
- Faced metal building insulations in lieu of a metal liner sheet

Sub-girt systems:
- Z bars (fixed or adjustable)
- Thermal clip system (for 4" to 6" thick insulation only)
- Special design from engineering
- Base channels
- Top channels
- Jamb flashings at openings

Outer sheet flashings of same material as outer sheet such as:
- Drips
- Inner and outer corners
- Jamb flashings at openings
- Flats for roofers

Thermal break tapes.

Insulation stick pins for insulation thicknesses over 3".

Insulation adhesives:
- Glue for semi-rigid batts
- Mastic - spot applied for rigid board
- Mastic - continuous for vapour barrier

Caulks:
- Exposed
- Concealed
- Factory or field taped caulk

Closures:
- Foam closures (EPT)
- Adhesive for closures
- Notched metal closures
- Continuous metal closures (not notched)

D. Fasteners

General:
- Carbon or stainless steel

Liner:
- Sub-girts to steel
- Sub-girts to concrete/masonry

Outer:
- Exposed nylon headed screws to sub-girts
- Exposed painted screws to sub-girts
- Concealed fasteners unpainted to sub-girts

E. Design

Is the elevation horizontal, vertical or sloped?

Design loads on the wall LL & DL (wind & snow on sloped wall sections).

Specifications for maximum stress and deflection.

Alternate products (is Architectural Approval required?)

Are sheet lengths within acceptable range?

Does the building have unusual shape or height that would require engineering to become involved?

Explosion panels.

Removable panels.

Translucent panels.

On horizontal wall panel design:
- Mitred corners or
- Flashed corners

Soffits:
- Pot light openings
- Column notches
- Ventilation strips/holes

For more information

For more information on sheet steel building products, or to order any CSSBI publications, vist our website at www.cssbi.ca