

CODE REFERENCES:
FOR CODES REFERENCED IN THIS DOCUMENT, ENSURE LATEST REVISION OF CODE, OR LATEST REVISION OF REPLACEMENT OF CODE, IS USED.

DENOTATION U.N.O. = UNLESS NOTED OTHERWISE

ORDER OF PRECEDENCE OF DOCUMENTS
IN THE EVENT OF CONFLICT BETWEEN THE VARIOUS DOCUMENTS, THE ONE LISTED HIGHEST IN THE LIST BELOW, SHALL TAKE PRECEDENCE:
1. VARIATION ORDERS / SITE INSTRUCTIONS
2. GLADAFRICA DRAWINGS / SCHEDULES
3. GLADAFRICA PROJECT SPECIFICATIONS
4. CLIENT'S SPECIFICATIONS
5. BILL OF QUANTITIES / PREAMBLES TO TRADES
6. STRUCTURAL DRAWINGS TO BE READ IN CONJUNCTION WITH ARCHITECTURAL, CIVIL, SERVICE ENGINEERING AND OTHER PROJECT SPECIFIC DRAWINGS
7. ANY DISCREPANCIES ARE TO BE COMMUNICATED TO GLADAFRICA ENGINEERS PRIOR TO CONSTRUCTION
8. DRAWING ARE NOT TO BE SCALED

GENERAL NOTES:
G1. LEGEND INDICATING SECTIONS AND DETAILS :
INDICATES SECTION
INDICATES DRAWING NUMBER ON WHICH SECTION IS SHOWN
G1. ALL BASES AND COLUMNS ARE SYMMETRICAL ON GRIDLINES U.N.O.
G2. ALL LEVELS ON DRAWINGS REFER TO THE TOP OF CONCRETE U.N.O.
T.O.C. LEVEL - FINISHED CONCRETE LEVEL - PLAN
T.O.C. LEVEL - FINISHED CONCRETE LEVEL - SECTION
G3. DIMENSIONS OF BEAMS ARE SHOWN AS WIDTH x DEPTH
G4. ALL BEAMS AND STRUCTURAL SLABS MUST BE PROVIDED WITH AN UPWARD CAMBER AS SHOWN BELOW U.N.O. :
CANTILEVERS SPAN DIVIDED BY 200
ALL OTHER SPANS SPAN DIVIDED BY 500
G5. JOINTS, INDICATED IN SURFACE BEDS, SLABS AND BEAMS, ARE ALSO TO BE CONSTRUCTED IN BRICK WALLS, SCREEDS AND FINISHES
G6. THE CONTRACTOR MUST ENSURE THAT ALL EMBEDDED ITEMS FOR SERVICES HAVE BEEN PROVIDED FOR AND POSITIONED, ACCORDING TO THE LATEST DRAWINGS OF ALL DISCIPLINES BEFORE CASTING CONCRETE.
G7. PROVISIONS FOR PROPS UNDER SLABS AND BEAMS :
THE CONTRACTOR MUST ENSURE THAT BEAM AND/OR SLABS HAVE SUFFICIENT STRENGTH AND ARE ADEQUATELY PROPPED TO CARRY CONSTRUCTION LOADS FROM ABOVE.
G8. STRUCTURAL FLOOR SLABS AND BEAMS SHALL BE RESHORED FOR AT LEAST TWO LEVELS BELOW THE PROPPED SLAB, TO BE DISCUSSED WITH ENGINEER.
G9. ENGINEER TO CONFIRM EXCAVATION LEVELS ON SITE. EXTRA EXCAVATION DOWN TO ACCEPTABLE MATERIAL SHALL BE BACKFILLED WITH MASS CONCRETE U.N.O.
G10. REFER TO ARCHITECTS DRAWINGS FOR CONCRETE FINISHES, GROOVES, CHAMFERS, ETC. U.N.O. ALL SMOOTH SURFACE CONCRETE CORNERS ARE TO BE PROVIDED WITH 20x20mm CHAMFERS.
G11. STORAGE OF CEMENT :
CEMENT SHALL NOT BE STORED FOR PERIODS LONGER THAN 6 WEEKS, WITHOUT THE APPROVAL OF THE ENGINEER.
G12. SYMBOLS DENOTING LAYERS OF REINFORCEMENT IN SLABS :
G13. G16. LEGEND FOR SLEEVES AND OPENINGS ON DRAWINGS :
FW = FIRE WATER
SP = SPRINKLERS
WW = WASTE WATER
W = WATER
E = ELECTRICAL
M = MECHANICAL
AC = AIR-CONDITIONING
SD = SUBSOIL DRAINAGE
SW = STORM WATER
PENETRATIONS/SLEEVES SMALLER THAN 110mm Ø NOT SHOW ON STRUCTURAL DRAWINGS REFER TO SERVICES DRAWINGS FOR ALL PENETRATIONS/SLEEVES.
G14. STRUCTURAL DESIGN AND SUPPLY ITEMS ARE TO HAVE DESIGNS BY A PROFESSIONAL REGISTERED ENGINEER WITH VALID PROFESSIONAL INDUPLTY. THESE DESIGNS ARE TO BE SUBMITTED TO THE ENGINEER FOR REVIEW ALONG WITH SUITABLE WORKS DRAWINGS.
PRECAST CONCRETE:
PC1. ALL EXPOSED STEEL ELEMENTS TO BE HOT DIP GALVANIZED TO 610 g/m²
PC2. PRECAST ELEMENTS ARE TO BE STRIPPED, HANDLED, TRANSPORTED AND STORED IN SUCH A MANNER THAT WILL NOT RESULT IN EITHER CRACKING OR BREAKING OF THE ELEMENTS - DISCUSS WITH THE ENGINEER.
PC3. ALL FIXING DETAILS ARE TO BE INSPECTED BY THE ENGINEER BEFORE CLOSING UP OF THE WORKS.
PC4. WHEN ALIGNING PRECAST ELEMENTS FOR FINAL FIXING, THE SUPPORTING STRUCTURE SHOULD BE IN ITS SELF SUPPORTING STATE.
SETTING OUT OF WORKS:
SW1. THE CONTRACTOR SHALL REQUEST THE ARCHITECT (PRINCIPAL AGENT) FOR THE INFORMATION RELATING TO THE BASIC REFERENCE PEGS OF THE SITE WITH COORDINATES AND BENCHMARKS FOR THE TRUE AND PROPER SETTING OUT OF THE WORKS TO THE CONTRACTOR.
SW2. THE CONTRACTOR SHALL CONFIRM IN WRITING TO THE ARCHITECT (PRINCIPAL AGENT) THAT ALL BOUNDARY PEGS AND BENCHMARKS HAVE BEEN IDENTIFIED, VERIFIED AND FOUND TO BE IN POSITION AND DELIVERY THERE OF IS ACCEPTED BY THE CONTRACTOR. THE CONTRACTOR SHALL CONFIRM THIS CHECKING OF THE MENTIONED ITEMS THROUGH A REGISTERED LAND SURVEYOR. A LAND SURVEYOR'S CERTIFICATE MUST BE ISSUED TO THE ARCHITECT (PRINCIPAL AGENT).
SW3. THE ARCHITECT (PRINCIPAL AGENT) IS RESPONSIBLE FOR THE PLACING OF THE BUILDING(S) ON THE SITE (VERTICALLY AND HORIZONTALLY).
SW4. THE CONTRACTOR IS RESPONSIBLE FOR THE TRUE AND PROPER SETTING OUT OF THE WORKS AND FOR THE CORRECTNESS OF THE POSITION, GRID SYSTEM, LEVELS, DIMENSIONS AND ALIGNMENT OF ALL PARTS OF THE WORKS. IT IS ADVISABLE THAT THE CONTRACTOR VERIFIES THIS THROUGH A REGISTERED LAND SURVEYOR.
SURFACE BED:
SB1. SAWN JOINTS ARE TO BE PROVIDED WITHIN 24 HOURS AFTER CASTING OF CONCRETE.
SB2. SAWN JOINTS ARE TO BE CUT AT RIGHT ANGLES TO CONSTRUCTION JOINTS IN ALL CASES.
SB3. NO SAWN JOINTS SHALL BE CUT IN TWO PERPENDICULAR DIRECTIONS, U.N.O WITH THE ENGINEER.
SB3.1. JOINTS WILL BE ON COLUMN GRIDS UNLESS DIMENSIONED FROM GRID LINES.
SB4. FOR DETAILS OF DAMP PROOF COURSE UNDER ALL SLABS ON GROUND REFER TO ARCHITECTS DRAWINGS.
SB5. BACKFILL AROUND COLUMNS AND WALLS TO BE PLACED IN 150mm LAYERS EVENLY DISTRIBUTED AND COMPACTED.
SB6. CONSTRUCTION JOINTS IN FLOOR CHANNELS TO BE PLACED AT POSITIONS NOT EXCEEDING 5m.
SB7. ALL TIED SERVICES AND CABLES MUST BE LAID DURING OR SOON AFTER THE CONSTRUCTION OF COLUMN AND SHAFT BASES.
SB8. SUBSOIL, AND CAST-IN SERVICES TO BE INSTALLED AND SIGNED OFF BY RELEVANT CONSULTANT PRIOR TO CASTING OF SURFACE BED
SB9. U.N.O. ALL FILL UNDER SURFACE BEDS SHALL BE APPROVED SELECTED MATERIAL, COMPACTED IN LAYERS OF 150mm THICK IN ACCORDANCE TO ENGINEERS SPECIFICATIONS.
SB10. MINIMUM LAP LENGTH OF MESH REINFORCEMENT IS 400mm.
SB11. REFER TO ARCHITECT'S DETAILS FOR TOP SURFACE FINISH.
SB12. ALL DOWEL BARS ARE TO BE 100% STRAIGHT, LEVEL AND AT RIGHT ANGLES TO THE JOINT DIRECTION.

CONCRETE NOTES:
C1. MATERIALS AND MIX PROPORTIONS :
1.1. THE GRADES FOR CONCRETE, U.N.O SHALL BE AS FOLLOWS :
COLUMNS CLASS 30/19 30mpa AT 28 DAYS
BASES CLASS 30/19 30mpa AT 28 DAYS
GROUND BEAMS CLASS 30/19 30mpa AT 28 DAYS
RETAINING WALLS CLASS 30/19 30mpa AT 28 DAYS
SHAFTS CLASS 30/19 30mpa AT 28 DAYS
STRUCTURAL SLABS CLASS 30/19 30mpa AT 28 DAYS
SURFACE BED SLABS CLASS 30/19 30mpa AT 28 DAYS
MASS CONCRETE CLASS 15/38 15mpa AT 28 DAYS
BLINDING LAYERS CLASS 15/19 15mpa AT 28 DAYS
STAIRS CLASS 30/19 30mpa AT 28 DAYS
PILES CLASS 25/19 25mpa AT 28 DAYS
1.2. WHEN READY MIX CONCRETE IS USED TEST CUBES ARE TO BE TAKEN ON CASTING AND PRESENTING THE FOLLOWING SOUTH AFRICAN CODES APPLY TO THE TAKING, CURING AND TESTING OF CONCRETE CUBES :
SANS 5660-SANS 5661 PART 1 +4 AND SANS 5663
FOR EVERY DAY OF CASTING A MINIMUM OF 6 CUBES MUST BE TAKEN 3 CUBES TO BE TESTED AFTER 7 DAYS OF CURING AND/OTHER REMAINING 3 CUBES MUST BE TESTED AFTER 28 DAYS OF CURING.
1.3. CONTRACTOR TO PROVIDE CONCRETE MIX FOR APPROVAL, ALSO SPECIFYING THE ORIGIN OF ALL MATERIALS TO BE USED.
1.4. REINFORCEMENT FOR CONCRETE SHALL COMPLY WITH SANS 282
MILD STEEL (R) YIELD STRESS = 250mpa
HIGH TENSILE STEEL (Y) YIELD STRESS = 450mpa
1.5. BENDING OF REINFORCEMENT TO BE IN ACCORDANCE WITH SANS 282.
1.6. ALL EXPOSED CONCRETE CORNERS MUST BE FORMED WITH A 20x20 CHAMFER.
1.7. PLACING OF REINFORCEMENT TO BE IN ACCORDANCE WITH SANS 10144.
C2. CONCRETE COVER OVER REINFORCEMENT U.N.O :
SLABS AND BEAMS : 40mm COVER TO MAIN REINFORCEMENT
WHICHEVER IS THE GREATER.
COLUMNS : 30mm MINIMUM COVER TO STRUTS.
50mm ALL AROUND.
WALLS : 30mm
GROUND BEAMS : 50mm ALL AROUND
RETAINING WALLS : 75mm
PILES : 75mm
C3. CASTING OF CONCRETE IN EXCESS OF 3.5m HIGH IS NOT PERMITTED WITHOUT PRIOR APPROVAL OF THE ENGINEER.
C4. CONCRETE SHALL NOT BE ALLOWED TO FALL FREELY THROUGH A HEIGHT OF MORE THAN 3m.
C5. REINFORCEMENT SHALL BE INSPECTED BY THE ENGINEER ONLY AFTER IT HAS BEEN COMPLETELY FIXED IN POSITION, FORMWORK IS CLEAN, SPACERS ARE PLACED IN POSITION, AND AFTER THE CONTRACTOR HAS INSPECTED IT HIMSELF, AND COMPLIED WITH THE PROJECT SPECIFIC QUALITY PLAN.
C6. BENDING, HEATING, CUTTING AND WELDING OF REINFORCEMENT IS NOT ALLOWED UNLESS IT HAS BEEN APPROVED BY THE ENGINEER IN WRITING.
C7. ALL CONSTRUCTION JOINTS REQUIRED BY THE CONTRACTOR MUST BE CLEARLY MARKED ON A DRAWING AND SUBMITTED TO THE ENGINEER FOR APPROVAL. THESE JOINTS MUST BE ACCEPTED IN WRITING BY THE ENGINEER BEFORE ANY WORK COMMENCES.
C8. CONSTRUCTION JOINTS IN SLABS AND BEAMS :
BEFORE COMMENCING TO CAST NEW CONCRETE (AS INDICATED BY A) THE SURFACE OF THE OLD CONCRETE (INDICATED BY B) SHALL BE CLEANED AND CHIPPED TO EXPOSE THE AGGREGATE AND SHALL BE KEPT WET FOR 2 HOURS BEFORE CASTING. THE OLD CONCRETE MUST BE SUSHED WITH CEMENT BEFORE CASTING.
C9. CONSTRUCTION JOINTS :
9.1. NO HORIZONTAL JOINTS SHALL BE ALLOWED IN BASES OR OTHER DEEP ELEMENTS.
9.2. CONSTRUCTION JOINTS ARE TO BE FORMED ACCORDING TO SPECIFICATION.
9.3. ALL PIPES THROUGH JOINTS, SHALL BE PROVIDED WITH AN EXPANSION JOINT OR FLEXIBLE COUPLING - THIS INCLUDES ALL CABLE SLEEVES, CONDUTS AND PIPES.
9.4. NO VERTICAL CONSTRUCTION JOINTS SHALL BE MADE IN ELEMENTS DIRECTLY EXPOSED TO THE WEATHER EXCEPT WHERE INDICATED OTHERWISE.
9.5. ALL C.J. SHALL BE APPROVED BY ENGINEER.
C10. SHRINKAGE STRIPS IN CONCRETE FLOORS SHALL NOT BE CAST WITHIN 28 DAYS OF CASTING THE LAST SURROUNDING SLAB. NOTE THAT THE BAY CONTAINING THE SHRINKAGE STRIP MUST REMAIN PROPPED UNTIL ALL CONCRETE HAS REACHED THE REQUIRED AGE.
COMPOSITE SLAB ON PERMANENT SHUTTERS:
CS1. COMPOSITE SLAB INSTALLATION PROCEDURE TO BE STRICTLY IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATION.
CS2. COMPOSITE SLAB PANEL TO BE FIXED TO STEEL SUPPORTS WITH EITHER TOP SPEED SCREWS OR SHOT DRIVEN FASTENERS.
CS3. DURING POURING OF CONCRETE, NEVER EXCEED A HEIGHT OF 300mm & ALWAYS POUR CONCRETE OVER LOAD-BEARING BEAMS.
CS4. STANDARD KERB FLASHING IS TO BE USED ON ALL SLAB EDGES AS PER MANUFACTURER'S DETAILS.
CS5. THE FOLLOWING PROCEDURES IS TO BE FOLLOWED AT INTERNAL PENETRATIONS THROUGH SLABS THAT ARE LARGER THAN 150x150mm x SMALLER THAN 500x500mm.
a) COMPOSITE SLAB PANELS TO BE SUPPLIED & ERECTED WITHOUT CUTTING THROUGH SHEETING FOR OPENINGS IN CONCRETE SLABS.
b) CARBON KERB FLASHING AT OPENING EDGES, PURPOSE-MADE & SUPPLIED BY "BROWNBUILD" COMPLETE WITH TROUGH FLUTE CLOSER, TO BE INSTALLED AT ALL OPENING POSITION ACCORDING TO MANUFACTURER'S SPECIFICATIONS.
CS6. WHERE OPENINGS ARE LARGER THAN 500x500mm TRIMMER SUPPORTS WILL BE SHOWN ALLOWING OPENINGS TO BE CUT PRIOR TO POURING OF CONCRETE, MAKING ROOM FOR STANDARD KERB FLASHING.
FOUNDATIONS:
F1. NO FOUNDATIONS ALLOWED ON BACKFILL - USE MASS CONCRETE BELOW FOUNDATIONS U.N.O.
F2. FOUNDATION DESIGN LEVELS ARE ESTIMATES AND BEARING LEVEL IS TO BE MADE UP WITH 10MPa MASS CONCRETE UP TO A MAXIMUM DEPTH OF 1.5m. IF BEARING LEVEL IS LOWER THAN 2.0m BELOW PLATFORM LEVEL THE ENGINEER IS TO BE INFORMED TO ADVISE.
F3. 50mm BLINDING LAYER IS TO BE PROVIDED UNDER ALL PADS AND STRIP FOUNDATIONS U.N.O.
(CLASS 15/19 CONCRETE).
F4. THE ENGINEER SHALL BE NOTIFIED IN GOOD TIME TO INSPECT ALL FOUNDATIONS PRIOR TO CASTING OF FOOTINGS.
F5. GLADAFRICA TO PROVIDE SERVICEABILITY LOADS TO THE NOMINATED PILING CONTRACTOR-PILING CONTRACTOR TO DO PILING DESIGN AND TAKE RESPONSIBILITY FOR THE DESIGN AND INSTALLATION. PILING CONTRACTOR TO VERIFY THEIR DESIGN ON SITE ONCE CONSTRUCTION COMMENCES.
PILE CAPS TO BE DESIGNED BY GLADAFRICA.
F6. REFER TO GEOTECHNICAL INVESTIGATION REPORT FOR FOUNDATION PROPOSALS AND REPORT ANY DISCREPANCY WITH THE ENGINEER.
F7. ALL PAD AND STRIP FOUNDATIONS WILL HAVE THE FOLLOWING MINIMUM LAYERWORKS U.N.O :
-EXCAVATE 0.15m EXTRA OVER BELOW FOUNDATION -COMPACT BASE OF THE EXCAVATION TO AT LEAST 90% MOD. ASHTO DENSITY.
-BACKFILL IN LAYERS NOT EXCEEDING 150mm THICKNESS, USING G7 MATERIAL TO 93% MOD. ASHTO DENSITY.
G7 MATERIAL SPECIFICATIONS:
MINIMUM CBR AT 93% MOD. ASHTO DENSITY=15
MAXIMUM PLASTICITY INDEX = 12%
MINIMUM GRADING MODULUS = 1
F8. EXCAVATIONS IN WET CONDITIONS: REFER TO SANS 19400.
F9. IF FOUNDATION IS NOT SHUTTERED AN ADDITIONAL 25mm OF CONCRETE COVER IS TO BE ADDED TO THE FOUNDATION.

BLOCK WALLS:
B1. NOMINAL COMPRESSIVE STRENGTH OF MASONRY UNITS SHALL BE 7mpa. MORTAR CLASS 7mpa AT 28 DAYS (LABORATORY TESTED).
B2. BLOCKS NOT TO BE WETTED PRIOR TO CONSTRUCTION.
B3. BLOCK SIZES AND PROPERTIES TO BE APPROVED BY ENGINEER. (MINIMUM SHELL THICKNESS TO BE 35mm)
B4. LAYOUT OF WALLS TO ARCHITECT'S DRAWINGS.
B5. WHERE JOINT ARE SHOWN IN CONCRETE, SIMILAR JOINTS SHALL BE CONSTRUCTED IN BLOCKWORK, SCREEDS AND FINISHES.
B6. HOLLOW BLOCKS WHICH HAVE TO SUPPORT FITTINGS, TO BE FILLED WITH 15MPa MORTAR.
B7. PROVIDE V-JOINTS IN PLASTERING AT EXPANSION AND SLIP JOINTS.
B8. ALL BEAMS & LINTELS OVER OPENINGS TO EXTEND A MINIMUM OF 300mm PAST THE OPENING ON BOTH SIDES.
B9. MAXIMUM BLOCK WALL PANEL SIZES - EXTERNAL WALL PANELS (200mm THICK) SHOULD NOT EXCEED 4.5m LONG x 3.0m HIGH. WALLS SHOULD BE TIED TO THE COLUMNS (SIDE) AND SLAB/BEAMS ABOVE. SHOULD THESE LIMITS BE EXCEEDED DISCUSS WITH ENGINEER.
B10. BLOCK WORK BELOW SURFACE BED LEVEL WILL BE FILLED WITH 13mm AGGREGATE CONCRETE MIX.
B11. REINFORCEMENT SHALL BE OF HARD-DRAWN MILD STEEL, COMPRISING OF 218 (Y) STEEL DIA. OF THE BAR, BARS EVERY 2nd LAYER (420mm c/c) EMBEDDED INTO THE MORTAR.
RULES FOR FIXING OF SERVICES TO ROOF STRUCTURE:
R1. RULES FOR FIXING OF SERVICES TO ROOF STRUCTURE (LOADS FROM TRUSSES AND GIRDERS).
R1.1. MAIN PIPES (LARGER THAN 65mm DIAMETER) AND HEAVY ITEMS TO BE SUSPENDED FROM TRUSSES AND GIRDERS - BUT NOT FURTHER THAN 100mm FROM NODE POINTS (APPROVED FLANGED CLAMPS MAY BE USED).
R1.2. MAXIMUM TOTAL ALLOWABLE LOAD FROM MIDSPAN OF TRUSS IS 200kg POINT LOAD (POSITION OF FAVORIT POINT LOADS TO BE CLEARED WITH THE ENGINEER).
R1.3. NOTE: SERVICE PROVIDERS TO CORRELATE THEIR DRAWINGS TO ENSURE THAT THE MAXIMUM LOAD IS NOT EXCEEDED.
R2. RULES FOR FIXING OF SERVICES TO ROOF STRUCTURE (LOADS FROM PURLINS)
R2.1. SMALLER PIPES (UP TO 50mm DIAMETER) AND APPROVED LIGHT WEIGHT ITEMS CAN BE HUNG FROM THE PURLINS, BUT PURLIN CLAMPS WILL ONLY BE ALLOWED FOR A MAXIMUM LOAD OF 8kg (THUS THE WEIGHT OF A MAXIMUM 32mm DIAMETER PIPE SPANNING 2m BETWEEN THE PURLINS). LARGER PIPES (40 - 50mm DIAMETERS) TO BE HUNG FROM THE VERTICAL WEB (BACK) OF THE PURLIN.
R2.2. MAXIMUM TOTAL ALLOWABLE LOAD FOR SERVICES AT MIDSPAN OF THE PURLIN TO BE 30kg OR ALTERNATIVELY 2 TIMES 25kg AT 1/3 SPANS.
R2.3. NOTE: SERVICE PROVIDERS TO CORRELATE THEIR DRAWINGS TO ENSURE THAT THE MAXIMUM LOAD IS NOT EXCEEDED.
R3. RULES FOR FIXING OF SERVICES TO ROOF STRUCTURE (GENERAL):
R3.1. BEFORE THE CLADDING COMMENCES, IT MUST BE INSPECTED BY THE ENGINEER FOR THE FORCES AND/OR MOMENTS SPECIFIED ON THE ENGINEER'S DRAWINGS. IF THESE ARE NOT SPECIFIED ON THE ENGINEER'S DRAWINGS THE FOLLOWING APPLIES
A. BEAMS: CONNECTIONS TO BE AS SHOWN IN THE SAISC HANDBOOK FOR STANDARD END CONNECTIONS FOR STRUCTURAL STEEL BEAMS, BUT ALSO ABLE TO TRANSMIT A SHEAR FORCE OF HALF THE SHEAR CAPACITY OF THE BEAM SECTION.
B. COLUMNS: SPLICE CONNECTIONS TO TRANSMIT THE COMPRESSIVE CAPACITY OF THE COLUMN SECTION.
C. CROSS-BRACING: CONNECTIONS TO TRANSMIT THE FULL TENSION CAPACITY OF THE BRACING SECTION.
D. COMPRESSIVE BRACING: CONNECTIONS TO TRANSMIT THE COMPRESSIVE CAPACITY OF THE BRACING MEMBER FOR ITS SPECIFIED LENGTH.
E. THE CONTRACTOR'S DESIGN CALCULATIONS FOR ALL THE CONNECTIONS TO BE SUBMITTED WITH THE FABRICATION DRAWINGS.
F. MECHANICAL AND CHEMICAL ANCHORS TO HAVE MINIMUM EDGE DISTANCES AND SPACINGS AS REQUIRED BY THE MANUFACTURER FOR SPECIFIED LOADS.
G. WELDING TO COMPLY WITH AWS D1.1-90 SPECIFICATION AND TO BE CARRIED OUT BY CERTIFIED WELDERS. ON-SITE FILLET WELDING.
H. ALL ARCHITECTUALLY EXPOSED STEELWORK TO HAVE MARKINGS GROUND OFF AND SMOOTHED.
PILING NOTES:
P1. SEE PILE TABLE FOR PILE WORKING LOADS, SIZES AND REINFORCING STEEL.
P2. CENTRINES OF PILES ARE TO BE ON THE CENTRELINES OF THE COLUMNS UNLESS OTHERWISE SHOWN.
P3. ALL LEVELS SHOWN REFER TO CASTING HEIGHT.
P4. PILE CAPS TO BE CENTRALLY PLACED ON PILES.
P5. THE BOTTOM OF ALL PILES TO BE PROPERLY AND THOROUGHLY CLEANED AND INSPECTED BY THE ENGINEER BEFORE CASTING OF CONCRETE.
P6. RAKED PILES TO BE INCLINED TO 1:8 FROM THE VERTICAL.
P7. TOP OF PILE TO BE CHOPPED AWAY FROM MINIMUM 75mm TO EXPOSE ROUGH AGGREGATE BEFORE PILE CAP IS CAST.
P8. DETAILS OF THE PILES ARE TO BE SUBMITTED TO THE ENGINEER FOR APPROVAL (TYPE, REINFORCEMENT, CONCRETE AND SPACERS)
P9. A GUARANTEE OF THE ALLOWABLE BEARING CAPACITY OF THE PILES SHALL BE GIVEN BY THE CONTRACTOR TO THE ENGINEER.
P10. THE CONTRACTOR IS REFERRED TO THE GEOTECHNICAL REPORT FOR GROUND/ROCK CONDITIONS AS WELL AS THE WATER TABLE.
P11. ALLOWANCE TO BE MADE FOR APPROXIMATELY 5% OF PILES TO BE TESTED IN TENSION AND COMPRESSION BY THE CONTRACTOR.
P12. PILE CONCRETE STRENGTH CLASS 25/19 25mpa AT 28 DAYS, UNLESS OTHERWISE SPECIFIED.
P13. REINFORCING BARS WITH SPIRAL REINFORCEMENT TO BE PROVIDED RIGHT THROUGH THE WHOLE LENGTH OF PILES.
P14. LAP LENGTHS OF REINFORCEMENT IN PILES TO BE 50 TIMES REINFORCEMENT BAR DIAMETER.
P15. MINIMUM COVER TO REINFORCING STEEL IN PILES TO BE 75mm.
SPECIFICATIONS:
-DETAILS OF PILES ARE TO BE SUBMITTED TO ENGINEER FOR APPROVAL.
-THE CONTRACTOR IS TO APPOINT A REGISTERED LAND SURVEYOR TO SURVEY THE AS BUILT POSITIONS OF THE PILES
-50mm TOLERANCE
-MINIMUM VERTICAL : 0.8% HIGH TENSILE.
VERTICAL TWIST TYPE WALL TIES FOR CAVITY WALLS:
CAVITY WIDTH TIE LENGTH THICKNESS (D) (L1) (L2) (L3) 240mm 350mm 4mm 150mm 250mm 3mm 120mm 220mm 3mm 90mm 190mm 3mm

MASONRY :
M1. BRICKFORCE TO BE IN ACCORDANCE WITH SANS 2001-CM1 AND MANUFACTURED FROM PRE-GALVANIZED WIRE TO GRADE 2 OF SANS 935.
(i.e. PIPES, FLATS, ROUND BARS, GRATING, VASTRAP PLATE) EXCEPT COLD FORMED STEEL.
M2. BRICKFORCE TO BE PLACED IN THE FIRST FIVE LAYERS OF MINIMUM YIELD STRESS OF 200 MPa.
M3. THE CONTRACTOR SHALL PROVIDE MILL TEST CERTIFICATES TO VERIFY THE STEEL GRADE USED.
M4. ALL SITE CONNECTIONS TO BE BOLTED U.N.O.
M5. ALL BOLTED CONNECTIONS SHALL HAVE A MINIMUM OF 2 BOLTS.
M6. SLOTTED HOLES U.N.O.
M7. DRILLED HOLES FOR BOLTED CONNECTIONS SHALL BE 2mm LARGER THAN THE BOLT DIAMETER U.N.O.
M8. HOLES IN STRUCTURAL BASE PLATES SHALL BE 4mm LARGER THAN THE ANCHOR BOLT DIAMETER FOR M20 BOLTS AND SMALLER, AND 6mm LARGER FOR M24 BOLTS AND LARGER.
M9. HEAVY DUTY WASHERS SHALL BE PROVIDED FOR ALL OVERSIZED AND SLOTTED HOLES.
M10. MIN EDGE DISTANCE FOR CONNECTIONS SHALL BE IN ACCORDANCE WITH SANS 10162 U.N.O.
M11. ALL BOLTS SHALL BE ISOMETRIC BOLTS OF CLASS 8.8 IN ACCORDANCE WITH SANS 1700-5.1 U.N.O.
M12. CLASS 8.8 HOLDING DOWN BOLTS SHALL BE MANUFACTURED FROM EN19 STEEL (ISO579 GRADE 709 MPa) AND TIEED TO A HARDNESS SYMBOL T.
M13. FRICTION GRIP BOLTS AND NUTS SHALL BE PROPERTY CLASS 10.9HR IN ACCORDANCE TO ISO 898 PARTS 1 AND ISO 14399 PARTS 3.
M14. FRICTION GRIP BOLTS SHALL BE TIGHTENED BY THE TURN OF THE NUT METHOD IN ACCORDANCE TO SANS 10094.
M15. CONTACT SURFACES AT FRICTION GRIP BOLT CONNECTIONS TO BE BLAST-CLEANED TO GRADE SA. 2.5 IN ACCORDANCE TO SIS 05 5900 WITH A SURFACE ROUGHNESS OF 40 - 80 MICRONS AND SURFACES TO BE LEFT UNCOATED AND FREE FROM ALL CONTAMINANTS AND BURRS.
M16. ALL FILLET WELDS SHALL BE 6mm (MIN.) CONTINUOUS AND SHALL BE SEALED AND IMPROVED U.N.O.
M17. ALL BUTT WELDS TO DEVELOP THE FULL STRENGTH OF THE SECTIONS BEING JOINED.
M18. NO FIELD WELDS WILL BE PERMISSIBLE UNLESS PRIOR APPROVAL IS OBTAINED FROM ENGINEER. FOR APPROVED FULL PENETRATION FIELD WELDS, BACKING PLATES SHALL BE USED. TACK WELD BACKING PLATE TO APPROPRIATE MEMBER FOR SHIPMENT.
M19. FOR FULL PENETRATION SHIP WELDS, BACKING PLATES MAY BE USED OR, BACK-UP FILLET WELDS MAY BE USED AT FABRICATION OPTION, U.N.O.
M20. ALL WELDING AND SURFACE PREPARATION SHALL BE DISCUSSED, INSPECTED AND APPROVED BY THE ENGINEER IN CONSTRUCTION WITH THE SANS, OR OTHER APPROVED INSPECTION AGENCY.
M21. SHOP SPLICING OF MEMBERS WILL NOT BE PERMITTED WITHOUT PRIOR APPROVAL OF THE DESIGN ENGINEER. APPROVED SPLICES SHALL HAVE A CAPACITY OF 100% OF THE SPLICED MEMBER AND ACCEPTANCE SHALL BE SUBJECT TO THE RESULTS OF NON-DESTRUCTIVE TESTS. COST OF SPLICING SHALL BE BORNE BY THE FABRICATOR.
M22. ALL GUSSET PLATES SHALL BE 6mm THICK U.N.O.
M23. ALL PURLINS AND CLADDING RAILS ARE TO BE FABRICATED IN SECTIONS CONTINUOUS OVER JOINTS.
M24. ALL OPEN ENDS OF HOLLOW SECTIONS SHALL BE SEALED WITH A 3mm PLATE.
M25. BURRS AND ROUGH EDGES SHALL BE GROUND PRIOR TO PAINTING AND WELDING. BUT IT END OF THE MEMBER SHALL BE SMOOTHED.
M26. HOLD OUT-TO-OUT DIMENSIONS EXACT FOR ALL CONTINUOUS RUNS OF BEAMS TO AVOID ACCUMULATIVE ERRORS.
M27. ALL RELEVANT CONCRETE AND STEEL DIMENSIONS SHALL BE CHECKED ON SITE BEFORE MANUFACTURE OF STRUCTURAL STEEL COMMENCES.
M28. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE STABILITY OF THE STRUCTURE UNTIL ALL ELEMENTS HAVE BEEN ERECTED AND FIXED IN POSITION.
M29. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PRODUCTION OF THE WORKSHOP DETAIL DRAWINGS WHICH SHALL BE CHECKED BY THE ENGINEER PRIOR TO ERECTION OF ROOF AND SIDE CLADDING.
M30. NON METALLIC, NON-SHRINK GROUT, TO BE APPROVED BY ENGINEER PRIOR TO USE. MINIMUM COMPRESSIVE STRENGTH REQUIRED AT 28 DAYS IS 60 MPa.
M31. GROUTING UNDER COLUMN BASE PLATES TO BE COMPLETED AT LEAST 7 DAYS PRIOR TO ERECTION OF ROOF AND SIDE CLADDING.
M32. OMIT PAINT WITHIN 50mm OF APPROVED FIELD WELDED CONNECTIONS AND APPLY FULL PAINT SPEC. AFTER WELDING HAS BEEN DONE AND INSPECTED.
M33. SHOP PAINTING: APPLY ONE COAT OF ALKO ZINC PHOSPHATE PRIMER ACCORDING TO MANUFACTURER'S SPECIFICATION TO A MINIMUM DRY FILM THICKNESS OF 40um. PAINTING AFTER ERECTION: TOUCH-UP PRIMER ON SITE. FINAL COATS AND COLOUR TO ARCHITECT'S SPECIFICATION.
M34. GALVANIZED STRUCTURAL STEEL TO BE HOT DIPPED TO 610g/m² ACCORDING TO SANS 121.
M35. ALL SITE WELDS SHALL BE SHOWN THUS:
M36. ALL STRUCTURAL STEEL UNDER GROUND LEVEL TO BE PAINTED WITH 2 LAYERS OF EPOXY TAR.
M37. CENTROID OF MEMBERS TO INTERSECT AT NODE POINTS.
M38. ALL CONNECTIONS THAT ARE NOT FULLY DETAILED ON THE ENGINEER'S DRAWINGS ARE TO BE DESIGNED AND DETAILED BY THE CONTRACTOR'S ENGINEER FOR THE FORCES AND/OR MOMENTS SPECIFIED ON THE ENGINEER'S DRAWINGS. IF THESE ARE NOT SPECIFIED ON THE ENGINEER'S DRAWINGS THE FOLLOWING APPLIES
A. BEAMS: CONNECTIONS TO BE AS SHOWN IN THE SAISC HANDBOOK FOR STANDARD END CONNECTIONS FOR STRUCTURAL STEEL BEAMS, BUT ALSO ABLE TO TRANSMIT A SHEAR FORCE OF HALF THE SHEAR CAPACITY OF THE BEAM SECTION.
B. COLUMNS: SPLICE CONNECTIONS TO TRANSMIT THE COMPRESSIVE CAPACITY OF THE COLUMN SECTION.
C. CROSS-BRACING: CONNECTIONS TO TRANSMIT THE FULL TENSION CAPACITY OF THE BRACING SECTION.
D. COMPRESSIVE BRACING: CONNECTIONS TO TRANSMIT THE COMPRESSIVE CAPACITY OF THE BRACING MEMBER FOR ITS SPECIFIED LENGTH.
E. THE CONTRACTOR'S DESIGN CALCULATIONS FOR ALL THE CONNECTIONS TO BE SUBMITTED WITH THE FABRICATION DRAWINGS.
F. MECHANICAL AND CHEMICAL ANCHORS TO HAVE MINIMUM EDGE DISTANCES AND SPACINGS AS REQUIRED BY THE MANUFACTURER FOR SPECIFIED LOADS.
G. WELDING TO COMPLY WITH AWS D1.1-90 SPECIFICATION AND TO BE CARRIED OUT BY CERTIFIED WELDERS. ON-SITE FILLET WELDING.
H. ALL ARCHITECTUALLY EXPOSED STEELWORK TO HAVE MARKINGS GROUND OFF AND SMOOTHED.
TYPICAL JOINT DETAILS:
M1. BRICKFORCE TO BE IN ACCORDANCE WITH SANS 2001-CM1 AND MANUFACTURED FROM PRE-GALVANIZED WIRE TO GRADE 2 OF SANS 935.
(i.e. PIPES, FLATS, ROUND BARS, GRATING, VASTRAP PLATE) EXCEPT COLD FORMED STEEL.
M2. BRICKFORCE TO BE PLACED IN THE FIRST FIVE LAYERS OF MINIMUM YIELD STRESS OF 200 MPa.
M3. THE CONTRACTOR SHALL PROVIDE MILL TEST CERTIFICATES TO VERIFY THE STEEL GRADE USED.
M4. ALL SITE CONNECTIONS TO BE BOLTED U.N.O.
M5. ALL BOLTED CONNECTIONS SHALL HAVE A MINIMUM OF 2 BOLTS.
M6. SLOTTED HOLES U.N.O.
M7. DRILLED HOLES FOR BOLTED CONNECTIONS SHALL BE 2mm LARGER THAN THE BOLT DIAMETER U.N.O.
M8. HOLES IN STRUCTURAL BASE PLATES SHALL BE 4mm LARGER THAN THE ANCHOR BOLT DIAMETER FOR M20 BOLTS AND SMALLER, AND 6mm LARGER FOR M24 BOLTS AND LARGER.
M9. HEAVY DUTY WASHERS SHALL BE PROVIDED FOR ALL OVERSIZED AND SLOTTED HOLES.
M10. MIN EDGE DISTANCE FOR CONNECTIONS SHALL BE IN ACCORDANCE WITH SANS 10162 U.N.O.
M11. ALL BOLTS SHALL BE ISOMETRIC BOLTS OF CLASS 8.8 IN ACCORDANCE WITH SANS 1700-5.1 U.N.O.
M12. CLASS 8.8 HOLDING DOWN BOLTS SHALL BE MANUFACTURED FROM EN19 STEEL (ISO579 GRADE 709 MPa) AND TIEED TO A HARDNESS SYMBOL T.
M13. FRICTION GRIP BOLTS AND NUTS SHALL BE PROPERTY CLASS 10.9HR IN ACCORDANCE TO ISO 898 PARTS 1 AND ISO 14399 PARTS 3.
M14. FRICTION GRIP BOLTS SHALL BE TIGHTENED BY THE TURN OF THE NUT METHOD IN ACCORDANCE TO SANS 10094.
M15. CONTACT SURFACES AT FRICTION GRIP BOLT CONNECTIONS TO BE BLAST-CLEANED TO GRADE SA. 2.5 IN ACCORDANCE TO SIS 05 5900 WITH A SURFACE ROUGHNESS OF 40 - 80 MICRONS AND SURFACES TO BE LEFT UNCOATED AND FREE FROM ALL CONTAMINANTS AND BURRS.
M16. ALL FILLET WELDS SHALL BE 6mm (MIN.) CONTINUOUS AND SHALL BE SEALED AND IMPROVED U.N.O.
M17. ALL BUTT WELDS TO DEVELOP THE FULL STRENGTH OF THE SECTIONS BEING JOINED.
M18. NO FIELD WELDS WILL BE PERMISSIBLE UNLESS PRIOR APPROVAL IS OBTAINED FROM ENGINEER. FOR APPROVED FULL PENETRATION FIELD WELDS, BACKING PLATES SHALL BE USED. TACK WELD BACKING PLATE TO APPROPRIATE MEMBER FOR SHIPMENT.
M19. FOR FULL PENETRATION SHIP WELDS, BACKING PLATES MAY BE USED OR, BACK-UP FILLET WELDS MAY BE USED AT FABRICATION OPTION, U.N.O.
M20. ALL WELDING AND SURFACE PREPARATION SHALL BE DISCUSSED, INSPECTED AND APPROVED BY THE ENGINEER IN CONSTRUCTION WITH THE SANS, OR OTHER APPROVED INSPECTION AGENCY.
M21. SHOP SPLICING OF MEMBERS WILL NOT BE PERMITTED WITHOUT PRIOR APPROVAL OF THE DESIGN ENGINEER. APPROVED SPLICES SHALL HAVE A CAPACITY OF 100% OF THE SPLICED MEMBER AND ACCEPTANCE SHALL BE SUBJECT TO THE RESULTS OF NON-DESTRUCTIVE TESTS. COST OF SPLICING SHALL BE BORNE BY THE FABRICATOR.
M22. ALL GUSSET PLATES SHALL BE 6mm THICK U.N.O.
M23. ALL PURLINS AND CLADDING RAILS ARE TO BE FABRICATED IN SECTIONS CONTINUOUS OVER JOINTS.
M24. ALL OPEN ENDS OF HOLLOW SECTIONS SHALL BE SEALED WITH A 3mm PLATE.
M25. BURRS AND ROUGH EDGES SHALL BE GROUND PRIOR TO PAINTING AND WELDING. BUT IT END OF THE MEMBER SHALL BE SMOOTHED.
M26. HOLD OUT-TO-OUT DIMENSIONS EXACT FOR ALL CONTINUOUS RUNS OF BEAMS TO AVOID ACCUMULATIVE ERRORS.
M27. ALL RELEVANT CONCRETE AND STEEL DIMENSIONS SHALL BE CHECKED ON SITE BEFORE MANUFACTURE OF STRUCTURAL STEEL COMMENCES.
M28. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE STABILITY OF THE STRUCTURE UNTIL ALL ELEMENTS HAVE BEEN ERECTED AND FIXED IN POSITION.
M29. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PRODUCTION OF THE WORKSHOP DETAIL DRAWINGS WHICH SHALL BE CHECKED BY THE ENGINEER PRIOR TO ERECTION OF ROOF AND SIDE CLADDING.
M30. NON METALLIC, NON-SHRINK GROUT, TO BE APPROVED BY ENGINEER PRIOR TO USE. MINIMUM COMPRESSIVE STRENGTH REQUIRED AT 28 DAYS IS 60 MPa.
M31. GROUTING UNDER COLUMN BASE PLATES TO BE COMPLETED AT LEAST 7 DAYS PRIOR TO ERECTION OF ROOF AND SIDE CLADDING.
M32. OMIT PAINT WITHIN 50mm OF APPROVED FIELD WELDED CONNECTIONS AND APPLY FULL PAINT SPEC. AFTER WELDING HAS BEEN DONE AND INSPECTED.
M33. SHOP PAINTING: APPLY ONE COAT OF ALKO ZINC PHOSPHATE PRIMER ACCORDING TO MANUFACTURER'S SPECIFICATION TO A MINIMUM DRY FILM THICKNESS OF 40um. PAINTING AFTER ERECTION: TOUCH-UP PRIMER ON SITE. FINAL COATS AND COLOUR TO ARCHITECT'S SPECIFICATION.
M34. GALVANIZED STRUCTURAL STEEL TO BE HOT DIPPED TO 610g/m² ACCORDING TO SANS 121.
M35. ALL SITE WELDS SHALL BE SHOWN THUS:
M36. ALL STRUCTURAL STEEL UNDER GROUND LEVEL TO BE PAINTED WITH 2 LAYERS OF EPOXY TAR.
M37. CENTROID OF MEMBERS TO INTERSECT AT NODE POINTS.
M38. ALL CONNECTIONS THAT ARE NOT FULLY DETAILED ON THE ENGINEER'S DRAWINGS ARE TO BE DESIGNED AND DETAILED BY THE CONTRACTOR'S ENGINEER FOR THE FORCES AND/OR MOMENTS SPECIFIED ON THE ENGINEER'S DRAWINGS. IF THESE ARE NOT SPECIFIED ON THE ENGINEER'S DRAWINGS THE FOLLOWING APPLIES
A. BEAMS: CONNECTIONS TO BE AS SHOWN IN THE SAISC HANDBOOK FOR STANDARD END CONNECTIONS FOR STRUCTURAL STEEL BEAMS, BUT ALSO ABLE TO TRANSMIT A SHEAR FORCE OF HALF THE SHEAR CAPACITY OF THE BEAM SECTION.
B. COLUMNS: SPLICE CONNECTIONS TO TRANSMIT THE COMPRESSIVE CAPACITY OF THE COLUMN SECTION.
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D. COMPRESSIVE BRACING: CONNECTIONS TO TRANSMIT THE COMPRESSIVE CAPACITY OF THE BRACING MEMBER FOR ITS SPECIFIED LENGTH.
E. THE CONTRACTOR'S DESIGN CALCULATIONS FOR ALL THE CONNECTIONS TO BE SUBMITTED WITH THE FABRICATION DRAWINGS.
F. MECHANICAL AND CHEMICAL ANCHORS TO HAVE MINIMUM EDGE DISTANCES AND SPACINGS AS REQUIRED BY THE MANUFACTURER FOR SPECIFIED LOADS.
G. WELDING TO COMPLY WITH AWS D1.1-90 SPECIFICATION AND TO BE CARRIED OUT BY CERTIFIED WELDERS. ON-SITE FILLET WELDING.
H. ALL ARCHITECTUALLY EXPOSED STEELWORK TO HAVE MARKINGS GROUND OFF AND SMOOTHED.
CROSSWALL AND PIER INTERFACE DETAIL (IF NOT FULLY BONDED)
M1. BRICKFORCE TO BE IN ACCORDANCE WITH SANS 2001-CM1 AND MANUFACTURED FROM PRE-GALVANIZED WIRE TO GRADE 2 OF SANS 935.
(i.e. PIPES, FLATS, ROUND BARS, GRATING, VASTRAP PLATE) EXCEPT COLD FORMED STEEL.
M2. BRICKFORCE TO BE PLACED IN THE FIRST FIVE LAYERS OF MINIMUM YIELD STRESS OF 200 MPa.
M3. THE CONTRACTOR SHALL PROVIDE MILL TEST CERTIFICATES TO VERIFY THE STEEL GRADE USED.
M4. ALL SITE CONNECTIONS TO BE BOLTED U.N.O.
M5. ALL BOLTED CONNECTIONS SHALL HAVE A MINIMUM OF 2 BOLTS.
M6. SLOTTED HOLES U.N.O.
M7. DRILLED HOLES FOR BOLTED CONNECTIONS SHALL BE 2mm LARGER THAN THE BOLT DIAMETER U.N.O.
M8. HOLES IN STRUCTURAL BASE PLATES SHALL BE 4mm LARGER THAN THE ANCHOR BOLT DIAMETER FOR M20 BOLTS AND SMALLER, AND 6mm LARGER FOR M24 BOLTS AND LARGER.
M9. HEAVY DUTY WASHERS SHALL BE PROVIDED FOR ALL OVERSIZED AND SLOTTED HOLES.
M10. MIN EDGE DISTANCE FOR CONNECTIONS SHALL BE IN ACCORDANCE WITH SANS 10162 U.N.O.
M11. ALL BOLTS SHALL BE ISOMETRIC BOLTS OF CLASS 8.8 IN ACCORDANCE WITH SANS 1700-5.1 U.N.O.
M12. CLASS 8.8 HOLDING DOWN BOLTS SHALL BE MANUFACTURED FROM EN19 STEEL (ISO579 GRADE 709 MPa) AND TIEED TO A HARDNESS SYMBOL T.
M13. FRICTION GRIP BOLTS AND NUTS SHALL BE PROPERTY CLASS 10.9HR IN ACCORDANCE TO ISO 898 PARTS 1 AND ISO 14399 PARTS 3.
M14. FRICTION GRIP BOLTS SHALL BE TIGHTENED BY THE TURN OF THE NUT METHOD IN ACCORDANCE TO SANS 10094.
M15. CONTACT SURFACES AT FRICTION GRIP BOLT CONNECTIONS TO BE BLAST-CLEANED TO GRADE SA. 2.5 IN ACCORDANCE TO SIS 05 5900 WITH A SURFACE ROUGHNESS OF 40 - 80 MICRONS AND SURFACES TO BE LEFT UNCOATED AND FREE FROM ALL CONTAMINANTS AND BURRS.
M16. ALL FILLET WELDS SHALL BE 6mm (MIN.) CONTINUOUS AND SHALL BE SEALED AND IMPROVED U.N.O.
M17. ALL BUTT WELDS TO DEVELOP THE FULL STRENGTH OF THE SECTIONS BEING JOINED.
M18. NO FIELD WELDS WILL BE PERMISSIBLE UNLESS PRIOR APPROVAL IS OBTAINED FROM ENGINEER. FOR APPROVED FULL PENETRATION FIELD WELDS, BACKING PLATES SHALL BE USED. TACK WELD BACKING PLATE TO APPROPRIATE MEMBER FOR SHIPMENT.
M19. FOR FULL PENETRATION SHIP WELDS, BACKING PLATES MAY BE USED OR, BACK-UP FILLET WELDS MAY BE USED AT FABRICATION OPTION, U.N.O.
M20. ALL WELDING AND SURFACE PREPARATION SHALL BE DISCUSSED, INSPECTED AND APPROVED BY THE ENGINEER IN CONSTRUCTION WITH THE SANS, OR OTHER APPROVED INSPECTION AGENCY.
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G. WELDING TO COMPLY WITH AWS D1.1-90 SPECIFICATION AND TO BE CARRIED OUT BY CERTIFIED WELDERS. ON-SITE FILLET WELDING.
H. ALL ARCHITECTUALLY EXPOSED STEELWORK TO HAVE MARKINGS GROUND OFF AND SMOOTHED.
CAVITY WALL DETAILS:
M1. BRICKFORCE TO BE IN ACCORDANCE WITH SANS 2001-CM1 AND MANUFACTURED FROM PRE-GALVANIZED WIRE TO GRADE 2 OF SANS 935.
(i.e. PIPES, FLATS, ROUND BARS, GRATING, VASTRAP PLATE) EXCEPT COLD FORMED STEEL.
M2. BRICKFORCE TO BE PLACED IN THE FIRST FIVE LAYERS OF MINIMUM YIELD STRESS OF 200 MPa.
M3. THE CONTRACTOR SHALL PROVIDE MILL TEST CERTIFICATES TO VERIFY THE STEEL GRADE USED.
M4. ALL SITE CONNECTIONS TO BE BOLTED U.N.O.
M5. ALL BOLTED CONNECTIONS SHALL HAVE A MINIMUM OF 2 BOLTS.
M6. SLOTTED HOLES U.N.O.
M7. DRILLED HOLES FOR BOLTED CONNECTIONS SHALL BE 2mm LARGER THAN THE BOLT DIAMETER U.N.O.
M8. HOLES IN STRUCTURAL BASE PLATES SHALL BE 4mm LARGER THAN THE ANCHOR BOLT DIAMETER FOR M20 BOLTS AND SMALLER, AND 6mm LARGER FOR M24 BOLTS AND LARGER.
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M10. MIN EDGE DISTANCE FOR CONNECTIONS SHALL BE IN ACCORDANCE WITH SANS 10162 U.N.O.
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