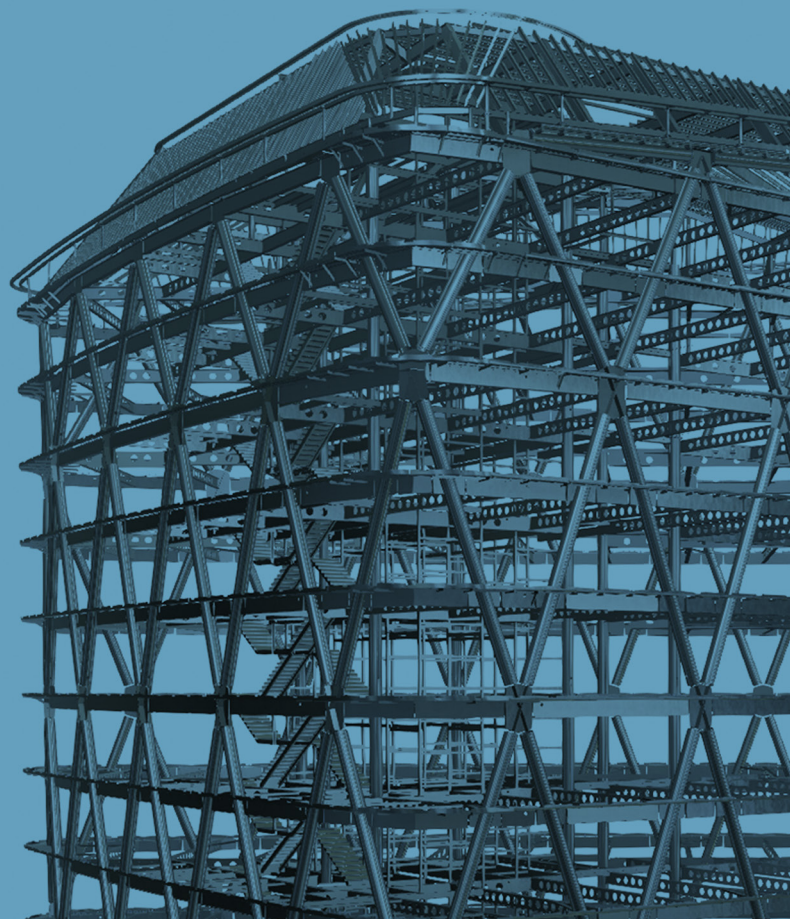
FACT SHEET FS14

FEBRUARY 2022

STEEL CONSTRUCTION NEW ZEALAND

SteelDoc 2022

CODE OF PRACTICE FOR STRUCTURAL STEELWORK DOCUMENTATION



First published in 2002, *SteelDoc* was developed to clearly identify what contract documents, particularly drawings, should contain for the structural steel contractor to efficiently prepare shop drawings, and to minimise rework and costly delays. The recommendations and checklists contained in *SteelDoc* have been collated following wide consultation and feedback from New Zealand structural steel fabricators and detailers, engineers and construction companies. The 2022 revision has been updated to align its requirements with current practice and standards.

WHY USE STEELDOC?

The use of *SteelDoc* brings value to many parties in the structural steel procurement process. Benefits include:

- Project manager or developer – ensures better service from structural consultants.
- Structural engineer – promotes level of service offered and manages the quality of design documentation.
- Structural steel contractor – manages tender risk.

"I LIKE THE WAY STEELDOC HAS BEEN LAID OUT – IT'S LOGICAL; IT'S EASY TO FOLLOW. AND WE'VE BEEN ABLE TO TAILOR IT TO SUIT OUR PURPOSES BY ADDING ITEMS TO OUR SYSTEM."

WAQAS LIAQAT, PRINCIPAL, SILVESTER CLARK

IMPLEMENTING STEELDOC

SteelDoc checklists are presented in an editable Word document format on the SCNZ website. The checklists may be used by consulting engineers in a number of ways, for example, to:

1. Use as a basis for the development of office drafting standards and practice for structural steelwork projects.
2. Review existing office drafting standards and practice to ensure they reflect best practice.
3. Train inexperienced engineers and draftspersons in the requirements for structural steelwork documentation.
4. Use as project-specific checklists for building projects warranting additional quality control such as complex and high-risk projects.

AN ENGINEER'S PERSPECTIVE

Waqas Liaqat, principal at consulting engineering practice Silvester Clark, says the practice has a good internal quality assurance (QA) process. The first thing its draftspersons will do with any new job is attach the QA sheets.

"Most of them have been picked up from *SteelDoc* and they have been incorporated with our internal QA system," he says. "We do this on almost every project."

Initially, Silvester Clark thought it wouldn't apply *SteelDoc* to smaller projects but it noticed that the process doesn't take long. "Only about 15 minutes at the start of a job," says Liaqat. "But it has heaps of benefits at the end; the size of the job doesn't matter much."

Liaqat says it depends on the complexity. For example, he explains, the checking may not be as elaborate if it's a house. However, if it is already there it's easy for the draftsperson to pick up any complexities, such as an unusual connection, and check them.

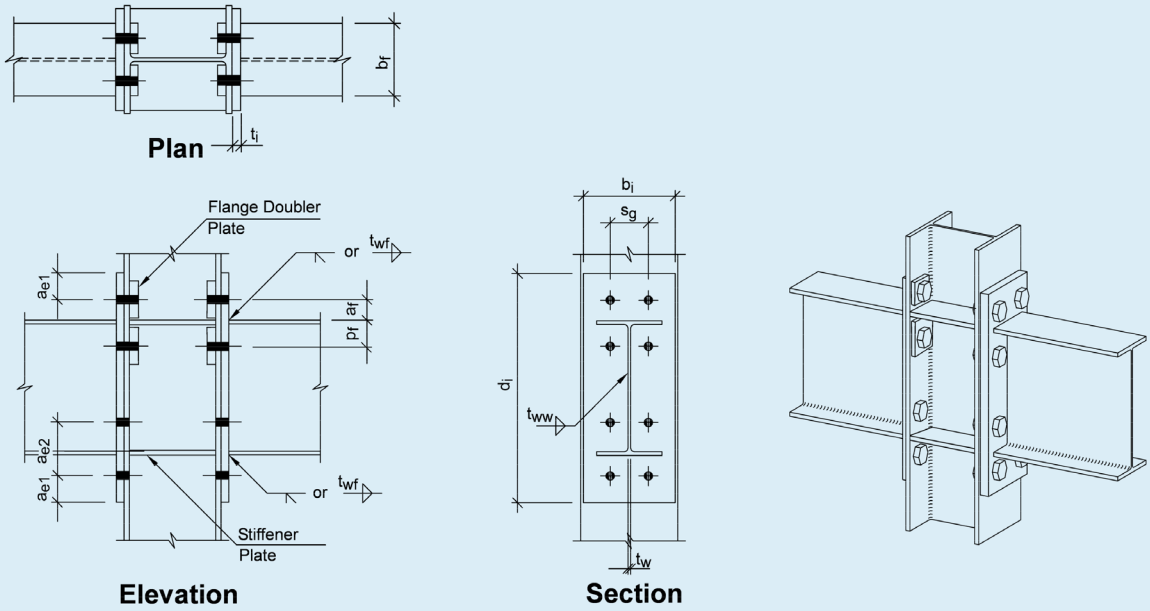
"Since we have been applying this QA procedure to jobs, we've noticed far fewer RFIs – from the engineers on site, from peer reviewers, from council. If you can eliminate those enquiries, you have more time to concentrate on the job."

Silvester Clark also carries out buildability checks alongside to make sure that what it is proposing is buildable. By going through all of the details, the team ensures that nothing gets missed. "It's quite thorough, we rarely miss anything out," says Liaqat.

"I also like the way *SteelDoc* has been laid out – it's logical; it's easy to follow. And we've been able to tailor it to suit our purposes by adding items to our system.

"INITIALLY, IT MIGHT SEEM DAUNTING BUT THE MORE YOU PUT STEELDOC INTO PRACTICE, THE SOONER IT BECOMES A HABIT AND THE MORE REWARDS YOU WILL ENJOY. IT'S EASY TO USE, SAVES HEAPS OF TIME AND YOUR QA SYSTEM IS EVEN BETTER."

WAQAS LIAQAT, PRINCIPAL, SILVESTER CLARK



THE ART OF DESIGN DOCUMENTS

Poor quality structural steelwork design documentation will generate a significant number of requests for information (RFIs) from the steel detailer during the shop drawing stage of the project. These matters can take significant time and be costly to resolve.

To illustrate the time and cost of this problem to the project structural engineer, this case study considers the data supplied by a structural steel contractor for two similar portal-framed warehouse buildings. Details of each project, including the number of RFIs, are presented in Table 1.

Project	Steel tonnage	Number of RFIs	RFIs per tonne
1	193	10	0.052
2	135	70	0.52

Table 1: RFI data for two similar portal-framed warehouse projects.

Assuming each RFI takes the structural engineer one hour to process at a charge out rate of $200 per hour, the cost of responding to the additional 60 RFIs associated with Project 2 is considerable at $12,000.

Ultimately, it is more efficient to put the time in up front to create clear and complete structural steelwork documentation when the project is fresh in the mind of the design and drafting team, rather than having to revisit the project several months later to respond to numerous RFIs during the shop drawing process. In addition to the extra time and cost to the Project 2 consultant, there is also the risk of reputational damage to the engineering practice as a result of the poor quality of its design documentation.

"SINCE WE HAVE BEEN APPLYING THIS QA PROCEDURE TO JOBS, WE'VE NOTICED FAR FEWER RFIS – FROM THE ENGINEERS ON SITE, FROM PEER REVIEWERS, FROM COUNCIL. IF YOU CAN ELIMINATE THOSE ENQUIRIES, YOU HAVE MORE TIME TO CONCENTRATE ON THE JOB."

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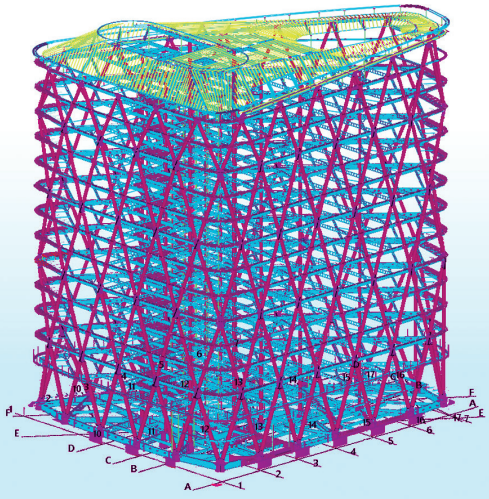

For your copy of the latest revision of *SteelDoc* and the associated checklists, visit the SCNZ website (www.scnz.org)

SCNZ STEEL CONSTRUCTION NEW ZEALAND

Steel Construction New Zealand Inc.
L2, 17-19 Gladding Place, P.O. Box 76403, Manukau, Auckland 2241, New Zealand
Tel: +64 9 263 5635, Email: info@scnz.org, www.scnz.org