

OmniSource®
CADQC™

Employing CAD Standards, Making Them Stick and Saving Money Too!!

✓ *All drawings created and revised actually following the corporate CAD standards.*

Sound unlikely? Well not anymore....

For over two years, a major U.S. corporation has furnished their published CAD standards and a copy of CADQC™ to outside Contractors who perform work. From the beginning of this process, the work returned has met the requirements of the CAD standards.

What is CADQC™?

OmniSource® CADQC™, Version 2.1, is a customizable productivity tool that ensures compliance with your CAD standards. The **CADQC** product suite consists of **CADQC Standards Editor**, which allows you to create a custom set of rules, and **CADQC Drawing Checker**, which uses those rules to check AutoCAD® drawings for compliance. A report is generated which lists the rule(s) broken and their locations. The operator may launch AutoCAD from within CADQC to correct the error(s). CADQC can run drawing files in a batch mode. Average run time per drawing is less than one minute.

A case history

Our client, a major corporation, of necessity must keep a very large and ever-increasing quantity of AutoCAD drawing files in an up-to-date condition to meet corporate and government mandates. New designs and modifications to facilities and equipment are often accomplished with the assistance of contractors.

In order to maintain integrity of the drawing database, certain information within the CAD drawing files must always be entered into specific attributed blocks. Specific data entry guidelines for identification of client's equipment, links to other data management programs and internal links between other CAD drawings must be rigorously followed and consistently applied.

All drawing files are subject to being checked out and revised at any time by numerous different outside Contractors and internal corporate users as well. The accurate, rapid and cost efficient revision of all new and existing files is insured if each file faithfully follows the Owner's CAD standards at all times.

Nearly 100% compliance has been achieved using the electronic checking benefits of CADQC. Recently the client's representative responsible for accepting or rejecting the contractor's CAD drawing files said, "I just checked in over 250 CAD files from the contractor and the errors were so few I decided it was best to fix them myself than to take the time to send them back. Took me about 15 fifteen minutes and I was finished.....before CADQC we had no choice but to fix or redraw many of them ourselves."

The three requirements for success

Owner's CAD standards

The first requirement is the Owner's clear and complete standards for all CAD drawing files.

CADQC

The second requirement is an automated CAD drawing file checking application, or CADQC. The Owner furnishes the Contractor with the CADQC standards checking file(s) to use in the CADQC drawing checking process. The Owner's CAD Supervisor writes the rules!

Owner's Contract requirements

The third requirement is for all contracts with Contractors doing work for the Owner require the Contractor to follow the Owner's CAD standards and use the Owner's CADQC drawing checking application to prove compliance and obtain final payment.

The Contractor's or CAD operator's role.

The Contractor furnishes the Owner's CAD standards to their CAD design staff and impresses on them the Owner's requirement that all of the CAD drawing files must follow their standard. During the design process the Contractor uses CADQC and the standards file furnished by the Owner's CAD Supervisor to check their own internal compliance with the Owner's CAD standards. The Contractor's CAD staff learns they must follow the Owner's CAD standards because the CADQC Drawing Checker finds each and every violation. So their only real choice is to follow the CAD standards. This process actually eliminates the CAD operator's options to change and personalize "his/her" drawings, working to the benefit of the Contractor as well as the Owner.

When the Owner's CAD drawing files are final and ready to be returned, the Contractor prepares the final run of the CADQC report for each of the new or revised files to be returned to the Owner along with the appropriate document transmittal.

The Owner's role in CAD file acceptance.

The Owner receives the new and revised CAD documents, the document transmittal and the CADQC report. Now the Owner can accept the CAD files with confidence and directly check them into their document management system because of the proof of compliance provided by the CADQC Drawing Checker Report for each file. Final payment for services from the Contractor can be authorized without delay.

Comparison without CADQC and with CADQC

□ Without CADQC (a typical experience):

The Owner furnished the Contractor with the CAD standard but the Contractor's compliance is clearly lacking. The Contractor performed the work adequately, from a design and constructability viewpoint, but a disaster as an electronic file. Clearly the Contractor was not successful in managing their CAD operators to adhere to the Owner's CAD standards to insure compliance.

The finished drawings are delivered to the Owner. The Owner discovers many non-compliance issues but lacks contractual terms to enforce Contractor's compliance with the CAD standards. In many instances today, the Owner's CAD Supervisor does not have the time, resources or tools to check for compliance in an acceptable amount of time.

The project is usually out of funding at this point and the funds for the Owner's staff to make the corrections is not available, so the drawings have to be accepted with all of the errors and non-compliance. Only the most critical errors can be corrected in order to move the drawings into the Owner's document management system. Future work on these non-compliant drawings also creates difficulties in editing and returning them to the Owner's document management system. Some of the original Contractor's errors must be corrected during this process, adding cost and delay to future work.

- ❑ With CADQC (imagine yourself here):

The contract between the Owner and the Contractor contains provisions that the Owner will retain a set amount of the Contractor's final contract payment until all project documentation is received and accepted by the Owner. The Owner furnishes the Contractor with the Owner's CAD standard and the CADQC standards checking file. The Contractor performs the work adequately and can now successfully manage their CAD operators to adhere to the Owner's CAD standards by running all of the Owner's CAD drawings through the CADQC Drawing Checker. All CAD files will be in compliance with the Owner's CAD standards and will be delivered with the Contractor's documentation via the CADQC Drawing Checker Report that demonstrates no CAD errors.

The finished drawings are delivered to the Owner. The Owner reviews the Contractor's CADQC Drawing Checker Reports and does not discover any CAD standards errors and checks the finished drawings into the document management system! The Owner releases the final contract payment to the Contractor.

Where does your company stand in this issue?

Knowing where you are is the beginning. Defining where you need to go is next.

If you are concerned that your CAD standards may need some improvement, we suggest you visit <http://management.cadalyst.com/cadman/>. Read the April 2000 edition of CADALYST magazine, the article entitled "Build Your CAD Standards" by Mark Middlebrook. SNC-Lavalin GDS can also help you with where you are, where you need to go and the necessary CAD standards to get you there.

Even with very good CAD standards and procedures, but without an automated, efficient tool to verify compliance, you are forced to spend a considerable amount of time to check certain "important" requirements. Your choices are to simply catch major errors or just accept the new and revised files with inherent errors and to deal with those problems later as they are discovered.

CADQC Benefits

By adding CADQC along with your CAD standards and inserting the compliance requirements in all contracts the results will be:

- ❑ Decrease in overall CAD drawing production hours
- ❑ Decrease in CAD drawing checking hours
- ❑ Increase in the accuracy of all of the individual CAD files
- ❑ Decrease in Owner's hours needed to receive Contractor's CAD files
- ❑ Decrease in Owner's hours needed to add CAD drawing files to document management system
- ❑ Increase in all user's confidence of the accuracy of finished CAD drawing files

CADQC Cost

If you are already an AutoCAD 2000 user, the cost of CADQC is just \$395.

If you are not already an AutoCAD 2000 user or want to run CADQC without AutoCAD, the cost is \$495.

Volume discounts are available. The technical support team at SNC-Lavalin GDS can assist you in the development of a standards checking file.

About SNC-Lavalin GDS

SNC-Lavalin GDS is an engineering and software development company with headquarters in Houston, Texas.

SNC-Lavalin GDS offers software applications for electronic document management and as a Registered Master Developer for Autodesk offers multiple software applications for users of AutoCAD. Our CAD group offers a wide range of CAD services, from unique document creation to large volumes of document conversions. Services also include conversions from MicroStation to AutoCAD and the addition of intelligence to CAD files to linking of CAD files to other applications for the purpose of data extraction or sharing.

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