

IALD/LIRC Guidelines for Specification Integrity

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The International Association of Lighting Designers (IALD), in conjunction with the Lighting Industry Resource Council (LIRC), has developed the following Guidelines for Specification Integrity which suggest actions specifiers can take to build and preserve a specification of high integrity.

These guidelines provide specific information for specifiers on how to write specifications with clarity and precision. The guidelines also provide information about how to communicate with clients, manufacturers and manufacturer's agents concerning their standards of quality for lighting equipment to ensure that recommendations apply to every phase of a project's development -- from the preliminary design phase through completion of construction.

I. FOUNDATION ELEMENTS FOR BUILDING A QUALITY SPECIFICATION

A. Work to develop a lighting equipment specification database.

1. Establish categories for the key luminaires (lighting fixtures) you specify, classifying them according to location, source and function or application (e.g., recessed incandescent downlights, pendant fluorescent uplights, exterior metal halide floodlights, etc.).
2. Develop a standard luminaire typing system to organize your lighting equipment.
3. Develop a master luminaire schedule or database that identifies acceptable products by manufacturer and specification number.
4. Track project pricing information in this database, allowing you to develop a history of unit price information that will be beneficial in evaluating lighting budgets for future projects.
5. Update your databases on a regular basis.

B. Establish clear and defensible standards of quality for the lighting equipment you specify.

1. Determine your interpretation of differing specification project grades.
2. Foster dialogue with fellow design professionals to assist your development of quality standards for lighting equipment.
3. Develop and use a checklist of product performance evaluation criteria including:
 - Photometric performance
 - Aesthetics
 - Construction materials and integrity
 - Finishes
 - Energy consumption
 - Manufacturer's support
 - Delivery
 - Long-term availability and service
4. Brief your local manufacturers' agents on your preferences concerning products and lighting equipment standards.
5. Adopt and maintain a company policy regarding specification integrity. Write a policy statement on lighting specifications to be distributed to your design clients, key project

decision-makers and other project team members.

6. Meet with key representatives of your local manufacturers' agencies to discuss your policy and how to work together to maintain the integrity of your lighting specifications.

C. Get to know the lighting products you specify.

1. Encourage manufacturers and their agents to visit your office with working sample products, not just catalogs. Use these visits to evaluate product performance.

2. When possible, visit manufacturers' facilities to see how the products are researched, developed, designed, manufactured, tested and shipped.

3. Cultivate professional relationships at regional or national levels with key factory-based contacts for manufacturers you specify. Rely on these contacts for assistance when special requirements arise on projects.

4. Attend seminars and trade shows that allow you to evaluate lighting equipment performance characteristics, compare products and remain current on technology.

5. Obtain product samples of similar luminaires from multiple manufacturers for comparative evaluation. Record your assessments of the products' qualities and add this information to your lighting product database.

6. Develop a reference of standard notes relating to lighting products that are to be used for quality assurance during the project design process.

D. Promote and protect the creation of unique designs.

1. Educate yourself, your professional colleagues and your clients' decision-makers as to the value of unique products and the necessity for protecting intellectual property.

2. Include language in your specification that addresses intellectual property and original designs. State your policy in upholding design copyrights and discouraging the consideration of "knock-offs."

II. ACTIONS IN THE PROJECT'S DESIGN PHASE(S)

A. Assess the project's lighting budget and establish product quality level.

1. Identify the level of lighting system quality and cost desired by the owner and supported by the budget.

a. Make the owner aware of tangible differences between various product quality levels.

b. If necessary, provide the owner examples of different levels of product quality (samples, installation, etc.) to assist him in understanding both the benefits and limitations of various equipment designs.

2. Communicate directly with the owner and principal decision-maker whenever possible to minimize the chance for confusion or miscommunication.

3. Clarify the rationale for the project's budget and identify various influences. Understand your role and formal responsibilities in ensuring that the budget for lighting is met.

4. Learn to recognize potential lighting-related budget problems early in the design phase. Provide constructive suggestions to the decision-maker for addressing problems.
5. Continually update costs for the lighting products you are planning on specifying to minimize later budget problems.
6. Identify construction bidding format (Guaranteed Maximum Price, Competitive Bid, etc.) and its possible impact on your design process.

B. Identify protocol for securing approval(s) of selected products.

1. Identify which project members will influence the selection of lighting equipment.
 - a. Enlist the architect or engineer in assisting you in holding your specification.
 - b. Determine the owner's position on specification integrity and assess likelihood of his support of your efforts.
2. Determine if "value engineering" or similar project scope and cost reviews may be a factor on the project.
 - a. Establish when value engineering activities are likely to occur in the project schedule.
 - b. Ally yourself with the decision-makers to clarify in advance which products should not be substituted or compromised.
 - c. Position yourself with the decision-makers to be the only logical adviser on these matters. should they arise.
 - d. Clearly communicate, in writing, anticipated compromises in performance, operation or maintenance that may result from value engineering.
3. Become familiar with regional conditions on your projects outside of the local area.
 - a. Find out who the local agencies are that represent the key products you specify and, if appropriate, make it known to them that you, as lighting specifier, are available to answer questions on the specifications.
 - b. Make the local agents aware of your policy regarding specification integrity.

C. Develop and employ a methodology for selecting lighting products.

1. Obtain relevant project information to ensure the most accurate and complete luminaire specification.
 - a. Room dimensions, finishes, ceiling cavity conditions and similar physical characteristics.
 - b. Determine specific locations for remote equipment to determine maximum allowable distances.

- c. Identify estimated operating temperatures where products are to be located (i.e., where will it be too hot or too cold).
2. When necessary, conduct mock-ups to assess or demonstrate lighting performance.
3. Understand and monitor the project design and construction schedule.

III. ACTIONS IN THE PROJECT'S CONSTRUCTION DOCUMENT PHASE

A. *Specification of the desired product(s).*

1. Secure accurate manufacturers' pricing of the products you are specifying. Ideally, "distributor net" costs are most informative, but "approximate contractor net" is often easier to determine. Share these costs, on a confidential basis, with your client and the project's decision-maker.
2. Use a luminaire schedule (lighting fixture schedule) when the project bidding process is clearly understood and you have some control over the product approval process. *Note: Refer to Section VII of this article ("Specification Approaches ") for detailed information on formulating a specification strategy.*
3. Use a written luminaire specification to give explicit luminaire descriptions when you are not sure you can depend upon the project team to assist in maintaining your specification.
4. Separate and identify special types from "commodity" items, especially when multiple-name specifications are required.
5. Distribute luminaire schedules to local manufacturer representatives to foster open communication on the project.
6. Notify both local agent and factory contact of project.

B. *Include product notes on lighting drawings and luminaire schedule to fully articulate project requirements.*

1. Note any accessories, special finishes, atypical mounting devices and other unusual requirements required for each luminaire type.
2. Make sure notes or specifications relating to a specific luminaire are shown in one location only to minimize errors if and when changes are made to the documents.

C. *Provide product details when necessary to fully clarify unique project conditions or requirements.*

1. Include complete details of architectural integration when mounting is not considered standard installation.
2. Properly note and cross-reference details to aid contractor in identification.

D. *Lighting section of the project's electrical specification.*

1. Make sure the specifications apply to all lighting products you specify on the job.
2. Delete or modify specification language that does not apply or may lead to misunderstanding.

3. Require that for all products where identical appearance across functions, lamps, etc. in a specific "family" of products such as downlights, exit signs, etc. is essential to the appearance of the job, that the whole family be supplied by the same manufacturer.
4. Require prequalification of contractor offered substitution 10 days prior to bid date.
5. Advise in the specifications that if any submissions from the low bidder are for products other than those specified, then -- in the event that they are approved -- the other bidders will be notified and offered the opportunity to resubmit their bids based on their supplying the same non-specified bill of materials as the low bidder.
6. Require the contractor to submit on the manufacturer product he intends to furnish within 14 days of the bid. State specifically that failure to submit within the deadline constitutes a guarantee that only the base specified product(s) will be supplied and that no other products, whether listed as alternates or not, will be considered.
7. Include a schedule impingement clause when allowed.
8. Decide what specification technique is most appropriate for each luminaire specified and include all documentation necessary to assure proper bidding. *Note: Refer to Section VII of this article ("Specification Approaches") for complete description of specification formats.*

IV. ACTIONS IN THE PROJECT'S BIDDING PHASE

- A. *Whenever possible, participate in the projects pre-bid meeting to answer questions and reinforce to the bidders your expectation for their bid submittals.*
- B. *Provide counsel to the decision-maker regarding lighting-related bid issues.*
- C. *Should the resulting construction bids be such that the decision-maker requires a reduction in project scope and costs, be in a position to lead and advise on the lighting portion of this effort. Do not allow the contractor to influence design decisions through only a cost reduction focus.*

V. ACTIONS IN THE PROJECT'S CONSTRUCTION PHASE

- A. *Review and Assessment of Contractor Submittals*
 1. Establish procedures, in advance, for the review and critical assessment of shop drawings, samples and other submittal materials required from the contractor by the specifications. *Note: It is important to inform the client of your procedures, so that you receive the necessary information in a timely manner.*
 2. Assist in the appraisal of prototypes or full-scale mock-ups that are required by the specifications.
 3. Inform the client and decision-maker of any contractor responses that are inconsistent with the specifications or may jeopardize the possible delivery time of the product.
- B. *Monitor construction progress.*
 1. Ensure that installation-related requirements of the lighting specification are being executed.

2. Respond to questions (Requests for Information or RFI) from the field in a timely manner so as not to jeopardize the project's schedule.

C. Intervene on the client's behalf, when requested, to resolve inconsistencies or problems.

1. Contact factories to verify shipment schedules and, if possible, obtain better delivery dates. *Note: it is important that the contractor know that it is with the client's permission that you are providing this service.*
2. Ask the construction manager/project manager to copy you on periodic construction reports to assist in foreseeing possible problems.

VI. SPECIFICATION APPROACHES

Single-Name Specification

Purpose: When only one product is suitable for the application and/or no known equals exist.

- List the one and only product by manufacturer name and specific catalog number.
- Indicate in the specification that submission of other than the listed product(s) will not be considered.
- Make it clear in the specification that accurate pricing for all single name products has been secured prior to bidding and that the information has been shared with the owner/client.
- Require unit pricing for product that clearly indicates what the contractor is charging the owner for the equipment.
- Advise the owner and project team prior to the bid date that these particular products are set aside for this treatment because of their unique character.
- Prepare for the owner in advance a detailed list of all the technical, performance and design features that warrant this product's special consideration.

Multiple-Name Specification

Purpose: When several products are available that will meet the design, performance and budgetary requirements of the project/application.

- List two or more products by manufacturer name and specific catalog number.
- Avoid using "or equal" in the specification. Such language is too vague and what constitutes an equal is clearly difficult to identify.

Single-Name Specification with Deduct Alternates

Purpose: When a particular product is decidedly preferred for an application, but one or more less costly products could be utilized, with the understanding that certain compromises in quality or performance would occur.

- List the preferred product by manufacturer name and specific catalog number. Clearly identify this product as the Base Bid.
- Identify as Deduct Alternates one or more products by manufacturer name and specific catalog number. Avoid listing manufacturer name only without first clearly identifying the performance criteria.
- Require unit pricing for both Base Bid and Deduct Alternates.
- Require that the Base Bid product be priced by the contractor, otherwise Deduct Alternate pricing is invalidated and his bid submittal will be considered incomplete.
- Make sure that the Deduct Alternates are properly listed or referenced on the Project's Contract Document bid form.
- Prohibit the submittal of voluntary Deduct Alternates by the Contractor unless expressly requested to permit such by the owner.

Performance Criteria Specification

Purpose: Special requirements for many government and some private sector projects dictate the

use of a performance criteria specification without the listing of manufacturers or specific catalog numbers. The performance specification attempts to identify, as completely as possible, both the quantifiable and qualitative aspects of a luminaire's performance. Any product submitted for consideration must meet or exceed the performance characteristics set forth in this specification.

- Clearly identify all aspects of luminaire performance that are important to the situation that the product is applied. Whenever possible, provide quantifiable performance measures in the specification so that the potential for interpretive disagreements are minimized.
- If non-quantifiable, qualitative aspects of a luminaire performance are critical (style, craftsmanship, etc.), provide examples of similar products or applications than can be cited later for comparison.
- Insist that the "burden of proof" with regards to a submitted product's ability to meet a performance criteria specification be placed solely on the submitting entity. The guidelines for submission are especially critical in a performance criteria specification. Note: It is not unusual to request extensive calculations as a requirement for product submittal under a performance specification. This will not only help assure compliance with the design intent, but will discourage submission of "less-than-serious" product contenders.

Custom Fixture Specification

Purpose: When an original luminaire design is developed to fulfill a specific application on a project.

- Provide sufficient details within the Construction Documents to permit the contractor to reasonably assess requirements for assembly and installation.
- If several manufacturers are identified as capable of producing a custom design, they should be mentioned by name with a predetermined product reference number/code. Provide contact names and telephone numbers whenever possible.
- Accept absolutely no substitutions on custom designs. Decision-maker must understand the rationale for this prior to bidding.
- Construct a separate Deduct Alternate if budget may become an issue. This will keep the specifier more in control in case of "value engineering."

Allowance Specification

Purpose: When actual product has not yet been selected or specific design approved. Sometimes used in situations where the bidding climate is uncertain or unknown.

- Include enough information in the specification to allow the contractor to accurately price installation, electrical and special needs (weight, voltage, wattage, etc.).
- Allowance should be a "contractor net price."

VII. SPECIFICATION LANGUAGE

Lighting specifications should be clear, concise and comprehensive. The sign of a professional specification is one that communicates both general and specific requirements in an authoritative, non-ambiguous manner. Defensibility, and respect for a lighting design specification, is more likely if its writing reveals confidence and insight. The bidder needs to be made to realize that the author completely understands the design and construction process, and fully expects a professional and forthright response. Problems in getting what is specified are less likely when this climate is created.

As an aid to the lighting specifier, sample language for a variety of frequently occurring specification situations has been developed. These examples can be used as departure points for crafting material appropriate for specific project needs.

A. Establishing specifier control in the bidding phase.

1. "Distributor Net Pricing has been secured for all products specified and is used in the preparation of preliminary opinions of probable cost. A record of specific unit costs has been shared confidentially with the Owner to assist him in analysis of bid submittals."

2. "Contractor shall supply 'contractor net' unit pricing for each lighting product specified. Unit price shall be for equipment only and not include installation or miscellaneous electrical costs. The unit price supplied shall be guaranteed for the project and valid for additions and deletions of product throughout the duration of the project."

3. "In addition to the Base Bid product(s) listed, the Contractor is requested to supply pricing for the following Deduct Alternate products. This pricing is to be supplied in addition to the Base Bid, using the Contractor Bid Form supplied for this Project. The Base Bid must include the Base Bid products specified. Failure to do so will invalidate the lighting bid submittal and, at the discretion of the Owner, may eliminate the Contractor's bid from further consideration."

B. Maintaining timeliness and efficiency in the submittal process.

1. "Within (twenty-one) 21 days of contract award, successful Contractor shall submit a complete list of lighting products he intends on furnishing with manufacturer and catalog designations, along with currently quoted lead times for delivery of same. Should the Contractor anticipate that the delivery schedule of any specified product may adversely impact the construction schedule, he shall bring it to the attention of the Owner at this time."

2. "Within twenty-one (21) days of bid award, Contractor shall provide a complete list of all lamps that will be furnished on the project. This list shall be organized alphabetically by the luminaire type indicated on the luminaire schedule, and include the manufacturer and exact model number of each lamp. Up to three (3) samples of any listed lamp shall be supplied at no additional cost to the project, if so requested by the specifier."

3. "A submittal for this luminaire type shall include an operable 120-volt non-returnable sample, complete with lamp(s), 72-inch grounded cord and plug and specified finish."

4. "Alternate products other than those listed by name in the specification will not be considered without prior written consent from the Lighting Designer."

C. Managing substitutions.

1. "Substitutions for the specified lighting products are not acceptable and will not be considered. Failure to include one of the specified products as a part of the Base Bid may, at the discretion of the Owner, invalidate the entire lighting product bid and exclude the Contractor from further consideration."

2. "Should the Contractor wish to have considered products other than those specified they must submit those items fourteen (14) days in advance of the bid. Failure to submit within that deadline constitutes a guarantee that the specified products will be supplied. The Lighting Designer will invoice the Contractor at Senior Designer hourly rates to review any product not listed in the specification. Submittal of a bid for this project shall include a written acknowledgment of these terms from the Contractor."

3. "Voluntary product substitutions from the Contractor will not be considered without prior approval to submit from the Lighting Designer."

D. Product design integrity/intellectual property.

1. "This luminaire is a unique design, available only from the specified manufacturer. No attempt should be made to solicit bids from other manufacturers to copy or 'knock-off' the luminaire design. Attempts to do so may, at the discretion of the Owner,

invalidate the entire lighting bid and exclude the contractor from further consideration.”

E. Focusing, aiming and adjustment.

1. “Contractor shall focus and adjust designated luminaire(s), after dark, at a time mutually agreeable to Contractor, Lighting Designer and Owner. Adjustments shall be made in accordance with the Lighting Designer’s stated intent, under his/her observation.”
2. “The aiming and adjustment of this luminaire must take place after the Project’s amenities have been completely installed. These amenities shall include, but not necessarily be limited to plantings, furniture, artwork, graphics and signage. Contractor shall include in his base bid, provisions for lifts, scaffolding, extension ladders and all other materials required to complete said adjustments.”
3. “This luminaire shall not be installed to track until aiming and adjustment takes place, just prior to the Project’s completion.”
4. “Exact distribution of the lamp for this luminaire will not be known until final aiming and adjustment takes place. Contractor shall provide 150 percent of total lamp quantity required, with distributions broken down as follows: 75 percent flood; 75 percent spot; 150 percent total. A portion of the lamps remaining after final aiming and adjustment will be turned over to the Owner for stock, while the others shall be returned unopened to the Contractor’s distributor for full credit.”

F. Anticipating frequently encountered on-site problems.

1. “This luminaire shall not be operated for work light at any time during construction, nor shall it be illuminated for any other reason. Failure to comply with this requirement will make necessary the relamping of this luminaire by the Contractor at no additional cost to the Owner.”
2. “Whenever this luminaire is used for work light during construction, it shall be relamped with the Project specified lamp just prior to turnover of area to Owner.”

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