



HOMEOWNER'S TIP

Are you concerned about mold? You can minimize your risk. Mold must have moisture to grow. At least seasonally, do a careful check of your home (inside and out) for evidence of leaks from rain, snow, ice and/or plumbing fixtures. Also, confirm there is enough ventilation to eliminate condensation in bathrooms and kitchens. You might want a consultant to do a moisture evaluation of your home. If you control moisture, you can control mold.

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FOR MORE INFORMATION

Call our local office or visit our Web site at:

www.criterium-engineers.com

IF IT'S NEW, IS IT GOOD?

How good is new construction in the United States and Canada? Generally, it is pretty good, but there are some significant areas of concern.

Our goal is to provide information that will allow quality-oriented builders to improve upon the products they deliver.

For what you should do, see back page.

The following is based on information and opinions gathered from the more than 70 offices of Criterium Engineers. Criterium Engineers is a network of affiliated offices throughout North America, in 35 states and British Columbia, Canada. The objective was to identify problem areas that have significant impact on the functional performance and quality "feel" of new homes. We asked our engineers just one question – "What problems are you finding?" An item made it to our list if we received the same response from various offices so as to consider it widespread geographically.

We evaluate all of the homes we look at by comparing them to what we consider to be typical of similar construction in that geographic area. We do not expect perfection.

In recent years, in our experience, the expectations of some homebuyers and owners have risen to the level of unfulfillable and unreasonable. We believe more education is needed to help homebuyers understand residential construction. Note, we did not survey homebuyers or owners.

Skill and workmanship are frequent causes of faulty construction. Material selection is the next most common cause. Finally, inadequate or superficial design and/or preparation is responsible for a significant portion of the quality compromises.

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CRITERIUM®



Survey “Ground Rules” and Background

Survey

From our discussions with builders, it is increasingly difficult to find skilled and motivated workers, let alone train them. This may be the biggest challenge facing the building industry if the desire is to reduce number and frequency of construction problems.

This is a summary of the information and opinions gathered from the Inspection Engineers throughout our organization. We adjusted for properties involving an existing dispute between the builder and owner since those would tend to skew our overall results. Our complete survey also examines the most probable causes of these deficiencies.

Criterium Engineers performs approximately 25,000 inspections per year of both new and existing construction. We have been in business since 1957.

The following are the **highlights** of our survey. If you are interested in a complete copy, please send us a self-addressed stamped envelope or e-mail at yourhome@criterium-engineers.com.

PROBLEM AREA: ROOF INSTALLATION

PROBLEM AREA	% OF NEW HOMES AFFECTED
Roof Installation	21%

EXAMPLES

- Lack of roofing paper
- Poorly installed eave, rake and valley details
- Improperly placed shingles
- Stapled installation

CONSEQUENCES

- Premature roof deterioration
- Water intrusion

PROBLEM AREA: SIDING INSTALLATION

PROBLEM AREA	% OF NEW HOMES AFFECTED
Siding Installation	15%

EXAMPLES

- Thin stucco, easily damaged
- Poor details
- Lack of proper brick veneer details

CONSEQUENCES

- Framing rot and mold
- Water intrusion
- Visual distortion and irregularities

PROBLEM AREA: WINDOW & DOOR INSTALLATION

PROBLEM AREA	% OF NEW HOMES AFFECTED
Window & Door Installation	23% and growing

EXAMPLES

- No flashing
- Inadequate attachment
- No sealant or incomplete sealant
- Out-of-square rough openings

CONSEQUENCES

- Poor window operation
- Water intrusion
- Framing rot and mold



PROBLEM AREA: WINDOW PERFORMANCE

PROBLEM AREA	% OF NEW HOMES AFFECTED
Window Performance	12%

EXAMPLES

- Leaks through window frame
- Broken seals

CONSEQUENCES

- Framing rot and mold
- Water intrusion

PROBLEM AREA: FRAMING ADEQUACY

PROBLEM AREA	% OF NEW HOMES AFFECTED
Framing Adequacy	18%

EXAMPLES

- Unbraced roof trusses
- Casually braced roof framing
- Cut and compromised floor framing (plumbing, electrical, etc)
- Inadequately attached sheathing and/or shear walls
- Lack of bracing or structural sheathing

CONSEQUENCES

- Structural sagging
- Structural distortion, leaning
- Compromised door and window operation
- Unusually springy floors

PROBLEM AREA: HVAC/MECHANICAL EQUIPMENT INSTALLATION

PROBLEM AREA	% OF NEW HOMES AFFECTED
HVAC/Mechanical Equipment Installation	16% and growing

EXAMPLES

- Inadequate service access
- Poorly installed ductwork
- Marginal capacity
- Inadequate safety standard compliance

CONSEQUENCES

- Lack of reliability
- Inadequate performance
- Short service life

PROBLEM AREA: FOUNDATION CONSTRUCTION

PROBLEM AREA	% OF NEW HOMES AFFECTED
Foundation Construction	14%

EXAMPLES

- Concrete spalling
- Exposed aggregate
- Significant cracking

CONSEQUENCES

- Premature deterioration
- Water intrusion
- Compromised structural performance

PROBLEM AREA: SITE SELECTION/SOIL PREPARATION

PROBLEM AREA	% OF NEW HOMES AFFECTED
Site Selection/Soil Preparation	19%

EXAMPLES

- Poor surface drainage
- Differential settlement
- Structural distortion

CONSEQUENCES

- Water intrusion
- Settlement and distortion



PROBLEM AREA	% OF NEW HOMES AFFECTED
Use of Unproven Materials	12%

What You Should Do

PROBLEM AREA: USE OF UNPROVEN MATERIALS

EXAMPLES

- Polybutylene (PB) pipe
- Hardboard siding
- EIFS

CONSEQUENCES

- Water intrusion
- Premature failure

Here are seven suggestions to minimize your risk if you are buying or building a new home:

1. Know your builder. Check with the Better Business Bureau, your State Attorney General's office and others for whom that builder has built homes, preferably homes built 3 to 5 years ago. Many problems in construction take some time to develop.
2. Hire a Building Inspection Engineer to monitor the construction for you, starting with a review of the construction documents. For such review and three to four visits during construction, the fee is normally \$1,000 to \$2,000, a modest investment to minimize the risk of problems with your new home.
3. If the home has already been built, hire a Building Inspection Engineer to thoroughly inspect it and work with you to develop a final punch list of things to be completed or corrected by the contractor. Do not make the final payment until those things are completed to your satisfaction.
4. Take plenty of pictures during construction. They may prove invaluable later.
5. Make sure you understand the extent and limitations of the builder's warranty and any statutory warranties required in your state. Be sure to notify the builder of any problems you are having before the warranties run out.
6. Work with a builder who participates in a third-party quality control program such as Quality Built. For more information, visit www.qualitybuilt.com.
7. To find a Building Inspection Engineer in your area, visit www.criterium-engineers.com, our Web site, or www.nabie.org, the Web site of the National Academy of Building Inspection Engineers.

Owning a new home can be exciting. You should not assume, however, that all new homes are well-built, quality homes, no matter how much you pay. To become a happy homeowner, you will need to be a prudent, cautious homebuyer.

For the office
nearest you, call
1-800-242-1969

YOUR HOME is your link to North America's oldest inspection service, with affiliate offices staffed exclusively by licensed engineers and architects — professionals committed to serving your needs. CRITERIUM ENGINEERS was founded in 1957.

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