

### 16.7.4 Accepting the Job

There could be many more punch-list construction deficiencies, large and small, structural and cosmetic, that are identified by the owners and their design professionals near the end of the job.

Structure-related items are the most serious. In addition to the ones described above, these might include poorly made framing connections such as loose, missing, or improperly tightened bolts and sloppy welds. Some members might be mislocated or have an insufficient length of bearing. Exposed panel fasteners might not be well aligned or properly tightened; applying too little torque to the screws with neoprene washers can leave the penetration unprotected; applying too much can dimple the panel. Identification of these problems is best left to experienced construction inspectors or engineers retained by the owner.

Sloppy fit-up causes appearance problems which may lead not to structural distress but certainly to an emotional one. Door jambs out of plumb, 1-in-wide caulked joints, and sagging gutters are difficult to miss. Field-formed roof and wall panels seem to suffer more than their share of problems with rusting, buckling, oil canning, and poor fit-up.

A convenient job completion checklist used by the builders of Star Building Systems, and similar to the one originally developed by MBMA, is reproduced with permission in Fig. 16.11. Intended mainly for steel erectors, the checklist may prove beneficial to owners and design professionals in their quest to realize the full benefits of metal building systems. A properly constructed metal building system provides an aesthetically appealing, practical, and virtually maintenance-free environment for many years.

## REFERENCES

---

1. The BOCA National Building Code, Building Officials and Code Administrators International, Inc., Country Club Hills, IL, 1999.
2. *Metal Building Systems Manual*, Metal Building Manufacturers Association, Cleveland, OH, 2002.
3. *Metal Building Systems*, 2d ed., Building Systems Institute, Inc., Cleveland, OH, 1990.
4. Donna Milner, "Metal Building Basics," *The Journal of Light Construction*, April 1989.
5. *Erection Guide*, Star Building Systems, Star Manufacturing Co., Oklahoma City, OK, 1989.
6. *Erection Manual*, Steelex Systems, Inc., Mason, OH, 1994.
7. Widespan Buildings, *Erection Information*, Butler Manufacturing Co., Kansas City, MO, 1978.
8. "Guidelines for Bracing Tilt-up Walls," *Concrete Construction*, December 1995.
9. Thomas Spoto and Duane S. Ellifritt, "Collapse of Metal Building System during Erection," *Journal of Performance of Constructed Facilities*, vol. 5, no. 4, November 1991, American Society of Civil Engineers.
10. David T. Ricker, "Some Practical Aspects of Column Base Selection," *AISC Engineering Journal*, Third Quarter, 1989.
11. Research at Texas Tech University quoted by Thomas C. Powell in "Steel Interchange," *Modern Steel Construction*, December 1992.
12. Alexander Newman, *Structural Renovation of Buildings: Methods, Details, and Design Examples*, McGraw-Hill, New York, 2001.



# ERECTION GUIDE

SECTION	10.	MISC
PAGE NO.	1	
DATE	6-1-79	
REPLACES	2-3-78	

## JOB COMPLETION CHECK LIST

CUSTOMER'S NAME \_\_\_\_\_

BUILDING SIZE \_\_\_\_\_

LOCATION \_\_\_\_\_

I. STRUCTURAL INSPECTION	<u>Yes</u>	<u>No</u>
a. Are all anchor bolts washered and properly nutted?	___	___
b. Is steel plumb, square, and aligned?	___	___
c. Are required brace rods tight with necessary bevel washers?	___	___
d. Do base plates align properly with concrete?	___	___
e. Have all connections been properly made and fully bolted according to plans and specifications?	___	___
f. Are High Tensile bolts in place and torqued as required?	___	___
g. Are eave struts, main building and canopies, straight and level?	___	___
h. Are purlins and girts properly made up and in good alignment without roll-over and with all sag rods in place?	___	___
i. Have all component parts, ridge sag rods, clip angles, haunch and flange braces, etc., as called for on erection drawings, been properly installed?	___	___
j. Is structural primer clean, with shop coat in good condition and any erection marks, burn and/or smoke properly repainted?	___	___
k. Have exposed structural members with shop primer been given a field coat?	___	___
l. Are headers and jambs for framed openings straight, unwarped and erected plumb and square, are unused holes in the opening filled with bolts?	___	___
m. Was any burning or welding, not ordered on erection drawings, necessary? If yes, explain on reverse side.	___	___
n. Are any structural components bent, warped, or dented? If yes, identify these areas on erection drawing and return with this form.	___	___
<b>II. SHEETING AND TRIM</b>		
a. Have roof and wall sheets been properly aligned, lapped and fully fastened?	___	___

FIGURE 16.11 Job completion checklist. (Star Building Systems.)