

# RECOMMENDED CODE OF STANDARD PRACTICE FOR STEEL JOISTS AND JOIST GIRDERS

Adopted by the Steel Joist Institute April 7, 1931  
Revised to May 2, 1994 - Effective September 1, 1994

## SECTION 1. GENERAL

### 1.1 SCOPE

The practices and customs set forth herein are in accordance with good engineering practice, tend to insure safety in steel joist and Joist Girder construction, and are standard within the industry. There shall be no conflict between this code and any legal building regulation. This code shall only supplement and amplify such laws. Unless specific provisions to the contrary are made in a contract for the purchase of steel joists or Joist Girders, this code is understood to govern the interpretation of such a contract.

### 1.2 APPLICATION

This Code of Standard Practice is to govern as a standard unless otherwise covered in the architects' and engineers' plans and specifications.

### 1.3 DEFINITION

The term Seller as used herein is defined as a company engaged in the manufacture and distribution of steel joists, Joist Girders and accessories.

The term Material as used herein is defined as steel joists, Joist Girders and accessories.

### 1.4 DESIGN

In the absence of ordinances or specifications to the contrary, all designs prepared by the specifying professional shall be in accordance with the applicable Steel Joist Institute specifications and table of latest adoption.

### 1.5 RESPONSIBILITY FOR DESIGN AND ERECTION

When Material requirements are specified, the seller shall assume no responsibility other than to furnish the items listed in Section 5.2 (a). When Material requirements are not specified, the Seller shall furnish the items listed in Section 5.2 (a) in accordance with applicable Steel Joist Institute Specifications of latest adoption, and this code. The Seller shall identify

Material by showing size and type. In no case shall the Seller assume any responsibility for the erection of the item furnished.

### 1.6 PERFORMANCE TEST FOR K-SERIES STEEL JOIST CONSTRUCTION

When job tests on a structure are required, joists shall have bridging and top deck applied as used. In addition to the full dead load, the test panel shall sustain for one hour a test load of 1.65 times the design live load. After this test load has been removed for a minimum of 30 minutes, the remaining deflection shall not exceed 20% of the deflection caused by the test load. The weight of the test panel itself shall constitute the dead load of the construction and shall include the weight of the joists, bridging, top deck, slab, ceiling materials, etc. The design live load shall be the live load specified and in no case shall it be more than the published joist capacity less the dead load. The cost of such tests shall be borne by the purchaser.

## SECTION 2. JOISTS AND ACCESSORIES

### 2.1 STEEL JOISTS AND JOIST GIRDERS

Steel joists and Joist Girders shall carry the designations and meet the requirements of the applicable Steel Joist Institute Specification and Table of latest adoption.

K-Series joists are furnished with parallel chords only, and with minimum standard end bearing depth of 2½ inches (64 mm).

LH- and DLH-Series joists are furnished either underslung or square ended, with top chords either parallel, pitched one way or pitched two ways. Underslung types are furnished with standard end bearing depth of 5 inches (127 mm) for LH-Series. DLH-Series are furnished with standard end bearing depths of 5 inches (127 mm) for section numbers thru 17 and 7½ inches (191 mm) for section numbers 18 and 19. The standard pitch is ⅛ inch in 12 inches (1:96). The nom-



# RECOMMENDED CODE OF STANDARD PRACTICE FOR STEEL JOISTS AND JOIST GIRDERS

inal depth of a pitched Longspan Joist is taken at the center of the span.

Joist Girders are furnished either underslung or square ended with top chords either parallel, pitched one way or pitched two ways. Under-slung types are furnished with a standard end bearing depth of 6 inches (152 mm) for Joist Girders weighing less than 60 pounds per lineal foot (89 kg/m), and 7½ inches (191mm) for Joist Girders weighing 60 pounds per lineal foot (89 kg/m) or more. The standard pitch is ⅛ inch in 12 inches (1:96). The nominal depth of a pitched Joist Girder is taken at the center of the span.

Because Longspan and Deep Long Span Joists may have exceptionally high end reactions, it is recommended that the supporting structure be designed to provide a minimum unit bearing pressure of 750 pounds per square inch (5171 Kilo Pascal).

## 2.2 SLOPED END BEARINGS

Where steel joists or Joist Girders are sloped, beveled ends or sloped shoes may be provided where the slope exceeds ¼ inch in 12 inches (1:48). For Open Web Steel Joists, K-Series, bearing ends will not be beveled for slopes of ¼ inch or less in 12 inches (1:48).

## 2.3 EXTENDED ENDS

Steel joist extended ends shall be in accordance with Manufacturer's Standard and shall meet the requirements of the Steel Joist Institute specification of latest adoption.

## 2.4 CEILING EXTENSIONS

Ceiling extensions shall be furnished to support ceilings which are to be attached to the bottom of the

<b>TABLE 2.5.1a</b>							
<b>K - SERIES JOIST</b>							
<b>MAXIMUM JOIST SPACING FOR HORIZONTAL BRIDGING</b>							
SECTION NUMBER*	**BRIDGING MATERIAL SIZE						
	Round Rod	Equal leg Angles					
	1/2" round (13mm) r = .13"	1 x 7/64 (25mm x 3mm) r = .20"	1-1/4 x 7/64 (32mm x 3mm) r = .25"	1-1/2 x 7/64 (38mm x 3mm) r = .30"	1-3/4 x 7/64 (45mm x 3mm) r = .35"	2 x 1/8 (51mm x 3mm) r = .40"	2-1/2 x 5/32 (64mm x 4mm) r = .50"
1 thru 9	3'- 3" (991mm)	5'- 0" (1524mm)	6'- 3" (1905mm)	7'- 6" (2286mm)	8'- 7" (2616mm)	10'- 0" (3048mm)	12'- 6" (3810mm)
10	3'- 0" (914mm)	4'- 8" (1422mm)	6'- 3" (1905mm)	7'- 6" (2286mm)	8'- 7" (2626mm)	10'- 0" (3048mm)	12'- 6" (3810mm)
11 and 12	2'- 7" (787mm)	4'- 0" (1219mm)	5'- 8" (1727mm)	7'- 6" (2286mm)	8'- 7" (2626mm)	10'- 0" (3048mm)	12'- 6" (3810mm)

\* Refer to last digit(s) of Joist Designation

\*\* Connection to Joist must resist 700 pounds (3114 N)

<b>TABLE 2.5.1b</b>						
<b>LH SERIES JOISTS</b>						
<b>MAXIMUM JOIST SPACING FOR HORIZONTAL BRIDGING</b>						
<b>SPANS OVER 60' REQUIRE BOLTED DIAGONAL BRIDGING</b>						
Section Number*	**BRIDGING ANGLE SIZE - (EQUAL LEG ANGLE)					
	1 x 7/64 (25mm x 3mm) r = .20"	1-1/4 x 7/64 (32mm x 3mm) r = .25"	1-1/2 x 7/64 (38mm x 3mm) r = .30"	1-3/4 x 7/64 (45mm x 3mm) r = .35"	2 x 1/8 (52mm x 3mm) r = .40"	2-1/2 x 5/32 (64mm x 4mm) r = .50"
02, 03, 04	4'- 7" (1397mm)	6'- 3" (1905mm)	7'- 6" (2289mm)	8'- 9" (2667mm)	10'- 0" (3048mm)	12'- 4" (3759mm)
05 - 06	4'- 1" (1245mm)	5'- 9" (1753mm)	7'- 6" (2286mm)	8'- 9" (2667mm)	10'- 0" (3048mm)	12'- 4" (3759mm)
07 - 08	3'- 9" (1143mm)	5'- 1" (1549mm)	6'- 8" (2032mm)	8'- 6" (2590mm)	10'- 0" (3048mm)	12'- 4" (3759mm)
09 - 10		4'- 6" (1372mm)	6'- 0" (1829mm)	7'- 8" (2337mm)	10'- 0" (3048mm)	12'- 4" (3759mm)
11 - 12		4'- 1" (1245mm)	5'- 5" (1651mm)	6'- 10" (2083mm)	8'- 11" (2118mm)	12'- 4" (3759mm)
13 - 14		3'- 9" (1143mm)	4'- 1" (1245mm)	6'- 3" (1905mm)	8'- 2" (2489mm)	12'- 4" (3759mm)
15 - 16			4'- 3" (1295mm)	5'- 5" (1651mm)	7'- 1" (2159mm)	11'- 0" (3353mm)
17			4'- 0" (1219mm)	5'- 1" (1549mm)	6'- 8" (2032mm)	10'- 5" (3175mm)

\* Refer to last two digits of Joist Designation

\*\* Connection to Joist must resist force listed in Table 104.5.1

RECOMMENDED CODE OF STANDARD PRACTICE FOR STEEL JOISTS AND JOIST GIRDERS

joists. They are not furnished for the support of suspended ceilings. The ceiling extension shall be either an extended bottom chord element or a loose unit, whichever is standard with the manufacturer, and shall be of sufficient strength to properly support the ceiling.

2.5 BRIDGING AND BRIDGING ANCHORS

- (a) Bridging standard with the manufacturer and complying with the applicable Steel Joist Institute specification of latest adoption shall be used for bridging all joists furnished by the manufacturer. Positive anchorage shall be provided at the ends of each bridging row at both top and bottom chords.
- (b) For the K- and LH-Series Joists horizontal bridging is recommended for spans up to and including 60 feet (18288 mm) except where Code requirements for *erection stability* and/or the Steel Joist Institute Specifications require bolted diagonal bridging.

LH- and DLH-Series Joists exceeding 60 feet (18288 mm) in length shall have bolted diagonal bridging for all rows.

Refer to Section #5 in the K-Series Specifications and Section #105 in the LH/DLH- Specifications for Erection Stability requirements.

The  $\ell/r$  ratio for horizontal bridging shall not exceed 300. The material sizes shown in TABLES 2.5.1a and 2.5.1b meet the criteria (page 88).

Horizontal bridging shall consist of two continuous steel members, one of which is attached to the top chord and the other attached to the bottom chord.

- (c) Diagonal cross bridging consisting of angles or other shapes connected to the top and bottom chords, of K-, LH-, and DLH-Series Joists shall be used when required by the applicable Steel Joist Institute standards and specifications of latest adoption.

Diagonal bridging, when used, shall have an  $\ell/r$  ratio not exceeding 200.

When the bridging members are connected at their point of intersection, the following table will meet the above specification.

TABLE 2.5.2  
K, LH & DLH SERIES JOISTS  
MAXIMUM JOIST SPACING FOR DIAGONAL BRIDGING

JOIST DEPTH	BRIDGING ANGLE SIZE - (EQUAL LEG ANGLES)				
	1 X 7/64 (25mm x 3mm) r = .20"	1-1/4 x 7/64 (32mm x 3mm) r = .25"	1-1/2 x 7/64 (38mm x 3mm) r = .30"	1-3/4 x 7/64 (45mm x 3mm) r = .35"	2x1/8 (51mm x 3mm) r = .40"
12	6'- 6" (1981mm)	8'- 3" (2514mm)	9'- 11" (3022mm)	11'- 7" (3530mm)	
14	6'- 6" (1981mm)	8'- 3" (2514mm)	9'- 11" (3022mm)	11'- 7" (3530mm)	
16	6'- 6" (1981mm)	8'- 2" (2489mm)	9'- 10" (2997mm)	11'- 6" (3505mm)	
18	6'- 6" (1981mm)	8'- 2" (2489mm)	9'- 10" (2997mm)	11'- 6" (3505mm)	
20	6'- 5" (1955mm)	8'- 2" (2489mm)	9'- 10" (2997mm)	11'- 6" (3505mm)	
22	6'- 4" (1930mm)	8'- 1" (2463mm)	9'- 10" (2997mm)	11'- 6" (3505mm)	
24	6'- 4" (1930mm)	8'- 1" (2463mm)	9'- 9" (2971mm)	11'- 5" (3479mm)	
26	6'- 3" (1905mm)	8'- 0" (2438mm)	9'- 9" (2971mm)	11'- 5" (3479mm)	
28	6'- 2" (1879mm)	8'- 0" (2438mm)	9'- 8" (2946mm)	11'- 5" (3479mm)	
30	6'- 2" (1879mm)	7'- 11" (2413mm)	9'- 8" (2946mm)	11'- 4" (3454mm)	
32	6'- 1" (1854mm)	7'- 10" (2387mm)	9'- 7" (2921mm)	11'- 4" (3454mm)	13'- 0" (3962mm)
36		7'- 9" (2362mm)	9'- 6" (2895mm)	11'- 3" (3429mm)	12'- 11" (3973mm)
40		7'- 7" (2311mm)	9'- 5" (2870mm)	11'- 2" (3403mm)	12'- 10" (3911mm)
44		7'- 5" (2260mm)	9'- 3" (2819mm)	11'- 0" (3352mm)	12'- 9" (3886mm)
48		7'- 3" (2209mm)	9'- 2" (2794mm)	10'- 11" (3327mm)	12'- 8" (3860mm)
52			9'- 0" (2743mm)	10'- 9" (3276mm)	12'- 7" (3835mm)
56			8'- 10" (2692mm)	10'- 8" (3251mm)	12'- 5" (3784mm)
60			8'- 7" (2616mm)	10'- 6" (3200mm)	12'- 4" (3759mm)
64			8'- 5" (2565mm)	10'- 4" (3149mm)	12'- 2" (3708mm)
68			8'- 2" (2489mm)	10'- 2" (3098mm)	12'- 0" (3657mm)
72			8'- 0" (2438mm)	10'- 0" (3048mm)	11'-10" (3606mm)

MINIMUM A307 BOLT REQUIRED FOR CONNECTION		
SERIES	*SECTION NUMBER	A307 BOLT DIAMETER
K	ALL	3/8" (9mm)
LH/DLH	2 - 12	3/8" (9mm)
LH/DLH	13 - 17	1/2" (12mm)
DLH	18 & 19	5/8" (15mm)

\* Refer to last digit(s) of joist designation



## 2.6 HEADERS

Headers for Open Web Steel Joists, K-Series as outlined and defined in Section 5.2 (a) shall be furnished by the Seller. Such headers shall be any type standard with the manufacturer. Conditions involving headers shall be investigated and, if necessary, provisions made to provide a safe condition. Headers are not provided for Longspan Steel Joists, LH-Series, and Deep Longspan Steel Joists, DLH-Series.

## 2.7 BOTTOM CHORD LATERAL BRACING FOR JOIST GIRDERS

Bottom chord lateral bracing may be furnished to prevent lateral movement of the bottom chord of the Joist Girder and to prevent the ratio of chord length to radius of gyration from exceeding that specified. The lateral bracing shall be that which is standard with the manufacturer, and shall be of sufficient strength to properly resist any lateral force exerted by the bottom chord of the Joist Girder.

# SECTION 3. MATERIALS

## 3.1 STEEL

The steel used in the manufacture of joists and Joist Girders shall comply with the applicable Steel Joist Institute specification of latest adoption.

## 3.2 PAINT

The shop coat of paint, when specified, shall comply with the applicable Steel Joist Institute specification of latest adoption.

# SECTION 4. INSPECTION

All joist and Joist Girder inspections shall be made in accordance with the provision for inspection in the applicable Steel Joist Institute specification of latest adoption.

# SECTION 5. ESTIMATING

## 5.1 PLANS FOR BIDDING

Plans to serve as the basis for bids shall show the character of the work with sufficient clarity to permit making an accurate estimate and shall show the following:

Designation and location of Materials (See Section 5.2 [a]).

Locations and elevations of all steel and concrete supporting members and bearing walls.

Location and length of joist extended ends.

Location and size of all openings in floors and roofs.

Location of all partitions.

Location and magnitude of concentrated loads as defined in Section 5.5.

Construction and thickness of floor slabs, roof deck, ceilings and partitions.

Joists or Joist Girders requiring extended bottom chords.

Paint, if other than manufacturer's standard.

## 5.2 SCOPE OF ESTIMATE

- (a) Unless otherwise specified, the following items shall be included in the estimate, and requirements shall be determined as outlined in Section 5.3 through 5.5.

Steel Joists

Joist Girders

Joist Extended Ends

Ceiling Extensions.

Extended bottom chord used as strut.

Bridging and bridging anchors.

Joist Girder bottom chord bracing.

Headers which are defined as members supported by and carrying Open Web Steel Joists, K-Series.

One shop coat of paint, when specified, shall be in accordance with Section 3.2.

- (b) The following items shall not be included in the estimate but may be quoted and identified as separate items:

Headers for Longspan Steel Joists, LH-Series.

Headers for Deep Longspan Steel Joists, DLH-Series.

Reinforcement in slabs over joists.

Centering material and attachments.



Miscellaneous framing between joists for openings at ducts, dumbwaiters, ventilators, skylights, etc.

Loose individual or continuous bearing plates and bolts or anchors for such plates.

Erection bolts for joist and Joist Girder end anchorage.

Horizontal bracing in the plane of the top and bottom chords from joist to joist or joist to structural framing and walls.

Wood nailers.

Moment plates.

### 5.3 JOIST LOCATION AND SPACING

The maximum joist spacing shall be in accordance with the requirements of the applicable SJI specification and load table of latest adoption.

Where sidewalls, wall beams or tie beams are capable of supporting the floor slab or roof deck, the first adjacent joists may be placed one full space from these members. Longspan Steel Joists and Deep Longspan Steel Joists are provided with camber. These joists may have a significant difference in elevation with respect to the adjacent structure because of this camber. This difference in elevation should be given consideration when locating the first joist adjacent to a side wall, wall beam or tie beam. Therefore, it is recommended that this joist be located one full space away from these members.

Open Web Steel Joists, K-Series, should be no closer than 6 inches (152 mm) to these supporting walls or members. Where partitions occur parallel to joists, there shall be at least one typical joist provided under each such partition, and more than one such joist shall be provided if necessary to safely support the weight of such partition and the adjacent floor, less the live load, on a strip of floor one foot (305 mm) in width. Where such partitions extend less than one-third ( $\frac{1}{3}$ ) of the span from the support, special spacing or additional joists shall not be required provided the loads do not exceed those in Section 5.5. When partitions occur normal to the joists, they shall be treated as concentrated loads, and joists shall be investigated as indicated in Section 5.5.

### 5.4 ACCESSORIES

Joist accessories standard with the manufacturer shall comply with applicable Steel Joist Institute specifications of latest adoption and shall be in accordance with Section 2 of this Code.

### 5.5 LOADS

The Steel Joist Institute Load Tables are based on uniform loading conditions and are valid for use in selecting joist sizes for gravity loads that can be expressed in terms of "Pounds per lineal foot" (Newtons per Meter) of joist. The Steel Joist Institute Weight Tables are based on uniformly spaced panel point loading conditions and are valid for use in selecting Joist Girder sizes for gravity conditions that can be expressed in kips (Kilo Newton) per panel point on the Joist Girder. **When Joist Girders are required to support unequal panel point loads or other special loads, a load diagram should be provided on the structural drawings.**

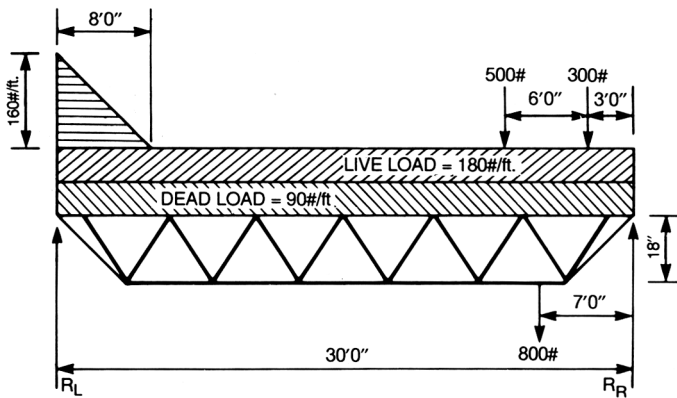
Loads such as Bulb "T"s, purlins, partitions, heavy pipes, monorail or tramrail type carrier, etc., running normal to the length of the joist, or a mechanical unit mounted on the joist, are concentrated loads. Where concentrated loads occur, the joist must be selected to carry the full combination of uniform load plus concentrated load. The magnitude and location of these concentrated loads shall be shown on the **structural drawings** when, in the opinion of the **specifying professional**, they may require special consideration by the manufacturer. Such joists shall be labeled "Special" on the **structural drawings**.

When Steel Joists are subjected to concentrated and/or varying loads, the specifying professional shall use the following procedure which will allow the:

1. Estimator to price the joists.
  2. Joist manufacturer to design the joists properly.
  3. Owner to obtain the most economical joists.
- A. Sketch the joist(s) on the structural drawings showing **all** loads to be supported.
  - B. Determine the maximum moment in the joist and derive the **uniform** load that will produce that moment.
  - C. Determine the maximum end reaction and derive the **uniform** load that will produce that reaction.
  - D. Using the largest of the 2 uniform loads in B and C, select a joist from the load table and add an "SP" after the joist designation.
  - E. Place the designation under the sketch with the following note:  
"Joist supplier to design joist to support loads as shown above."



ESTIMATING JOIST SIZE FOR SPECIAL LOADINGS  
 EXAMPLE: U.S. CUSTOMARY UNITS



**18K9 SP**

(See Method of Joist Selection Below)

Joist supplier to design joist to support loads as shown above.

$$\text{Total Load} = \frac{160}{2} (8) + (180 + 90)30 + 500 + 800 + 300 = 10,300 \text{ lbs.}$$

$$R_L = \frac{160(8)}{2} \left[ \frac{30 - \frac{8}{3}}{30} \right] + \frac{(180+90)(30)}{2} + 500 \left[ \frac{9}{30} \right] + 800 \left[ \frac{7}{30} \right] + 300 \left[ \frac{3}{30} \right] =$$

$$R_L = 5000 \text{ lbs.}$$

$$R_R = 5340 \text{ lbs.}$$

$$\text{Assume } R_R = \frac{W_{e1}(L)}{2}, W_{e1} = \frac{2(5340)}{30} = 356 \text{ lbs/ft.}$$

Point of Max. Mom. = Point of Zero Shear (V) =  $L_1$   
 (dist. from rt. end of Jst.)

$$V = \text{Zero} = 5340 - (300+500+800) - (180+90)(L_1)$$

$$L_1 = 13.85 \text{ ft.}$$

$$M @ L_1 = 5340 (13.85) - 300(10.85) -$$

$$800(6.86) - 500(4.85) - \frac{(180+90)(13.85)^2}{2}$$

$$M = 36,903 \text{ ft. lbs.}$$

$$\text{Assume } M = \frac{W_{e2}(L)^2}{8}, W_{e2} = \frac{8(36,903)}{(30)^2} = 328 \text{ lbs/ft.}$$

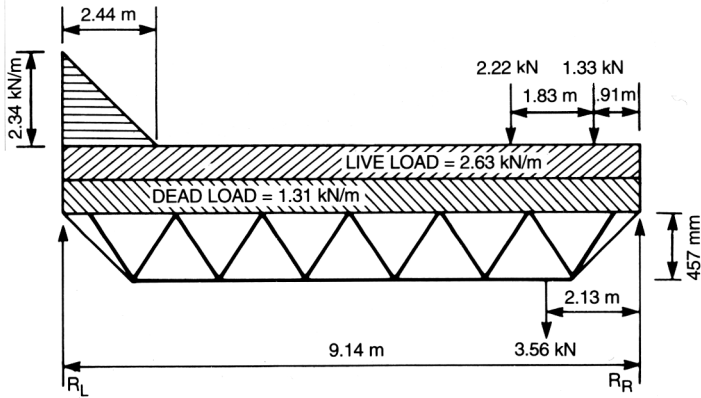
Using  $W_{e1} = 356 \text{ lb/ft. @ SPAN} = 30'$ ,  
 and  $D = 18''$

Select 18K9 for total load (402) and live load (229) and call it: **18K9SP**

The specifying professional shall compare the equivalent uniform loads  $W_{e1}$  &  $W_{e2}$  to the uniform loads tabulated in the K-Series Load Table. Loads in excess of the load table loads indicate that the specifying professional shall consider using additional joists to reduce the loading, or use the LH-Series Joist and make provisions for 5" deep bearing seats.



METRIC EXAMPLE:



**18K9 SP**

(See Method of Joist Selection Below)

Joist supplier to design joist to support loads as shown above.

$$\text{Total Load} = \left[ \frac{2.34}{2} \right] (2.44) + (2.63 + 1.31)9.14 + 2.22 + 3.56 + 1.33 =$$

$$\text{Total Load} = 2.86 + 36.01 + 2.22 + 3.56 + 1.33 = 45.98 \text{ kN}$$

$$R_L = \frac{2.34(2.44)}{2} \times \frac{9.14 - (2.44/3)}{9.14} + \frac{(2.63 + 1.31)9.14}{2} + 2.22 \left[ \frac{2.74}{9.14} \right] + 3.56 \left[ \frac{2.13}{9.14} \right] + 1.33 \left[ \frac{.91}{9.14} \right] =$$

$$R_L = (2.86 \times .91) + 18.01 + .67 + .83 + .13 = 22.24 \text{ kN}$$

$$R_R = 45.98 - 22.24 = 23.74 \text{ kN}$$

$$\text{Assume } R_R = \frac{W_{e1}(L)}{2}, W_{e1} = \frac{2(23.75)}{9.14} = 5.20 \text{ kN/m}$$

Point of Max. Mom. = zero Shear (V) =  $L_1$  (dist. from right end of joist)

$$V = \text{Zero} = 23.75 - (1.31 + 2.22 + 3.56) - (2.63 + 1.31)(L_1)$$

$$L_1 = 4.23 \text{ m}$$

$$M @ L_1 = 23.75 (4.23) - 1.33(3.32) -$$

$$2.22(1.49) - 3.56(2.10) - \frac{(2.63 + 1.31)(4.23)^2}{2} =$$

$$\text{Moment @ } L_1 = 50.01 \text{ kN-m}$$

$$\text{Assume } M = \frac{W_{e2}(L)^2}{8}, \text{ where } W_{e2} = \frac{8(50.01)}{(9.14)^2} = 4.79 \text{ N/m}$$

Using  $W_{e1} = 5.20 \text{ kN/m}$  @ SPAN = 9.14 m, and  $d = 457 \text{ mm}$

Select 18K9 for total load (5.86 kN/m) and live load of (3.34 kN/m)

Call it: **18K9SP**

The specifying professional shall compare the equivalent uniform loads  $W_{e1}$  &  $W_{e2}$  to the uniform loads tabulated in the K-Series Load Table. Loads in excess of the load table loads indicate that the specifying professional shall consider using additional joists to reduce the loading, or use an LH-Series Joist and make provisions for 127 mm deep bearing seats.



Due consideration by the specifying professional shall be given to live loads due to:

1. Ponded rain water.
2. Excessive accumulation of snow in the vicinity of obstructions such as penthouses, signs, parapets, adjacent buildings, etc.
3. Wind uplift.
4. End moments at the joist end supports due to live and/or wind/seismic loads shall be shown on the structural drawings by the specifying professional.

For moment resisting joists framing near the end of a column, due consideration shall be given to extend the column length to allow a plate type connection between the top of the joist top chord and the column. Preferably, avoid resolving joist end moment forces through the joist bearing seat connection.

The structural drawings shall specify that all moment resisting joists shall have all dead loads applied to the joist before the bottom chord struts are welded to the column connection.

The top and bottom chord moment connection details shall be designed by the specifying professional. The joist designer shall furnish the specifying professional with the joist detail information if requested.

The design loads, as determined by the specifying professional, shall not be less than that specified in the applicable building codes.

**SECTION 6.**  
**PLANS AND**  
**SPECIFICATIONS**

**6.1 PLANS FURNISHED BY BUYER**

The Buyer shall furnish the Seller plans and specifications showing all Material requirements, the layout of walls, columns, beams, girders and other supports, as well as floor and roof openings and partitions correctly dimensioned. The live loads to be used, the wind uplift if any, the weights of partitions and the location and amount of any special loads, such as monorails, fans, blowers, tanks, etc., shall be indicated. The elevation of finished floors and roofs and bearings shall be shown.

**6.2 PLANS FURNISHED BY SELLER**

The Seller shall furnish the Buyer with detailed plans and lists showing the number, type, locations, spacing, anchorage and mark of all Material as may be required for proper installation. All Material shall be identified with its mark which also appears on the bill of material. The type of shop paint, when required, shall be indicated on the drawings.

**6.3 DISCREPANCIES**

The specifying professional's bid plans and specifications will be assumed to be correct in the absence of written notice from the Buyer to the contrary. When plans are furnished by the Buyer which do not agree with the Architect's bid plans, such detailed plans shall be considered as a written notice of change of plans. However, it shall be the Buyer's responsibility to advise the Seller of those changes which affect the joists or Joist Girders.

**6.4 APPROVAL**

When joist placement plans are furnished by the Seller, prints thereof are submitted to the Buyer and owner for examination and approval. The Seller allows a maximum of fourteen (14) calendar days in his schedule for the return of placement plans noted with the owner's and customer's approval, or approval subject to corrections as noted. The Seller makes the corrections, furnishes corrected prints for field use to the owner/customer and is released by the owner/customer to start joist manufacture.

Approval by the owner/customer of the placement plans, sections, notes and joist schedule prepared by the Seller indicates that the Seller has correctly interpreted the contract requirements, and is released by the owner/customer to start joist manufacture. This approval constitutes the owner's/customer's acceptance of all responsibility for the design adequacy of any detail configuration of joist support conditions shown by the Seller as part of his preparation of these placement plans.

Approval does not relieve the Seller of the responsibility for accuracy of detail dimensions on the plans, nor the general fit-up of joists to be placed in the field.

**6.5 CHANGES**

When any changes in plans are made by the buyer (or Architect) either prior to or after approval of detailed plans, or when any Material is required and was not shown on plans used as the basis of the bid, the cost of such changes and/or extra Material shall be paid by





the Buyer at a price to be agreed upon between Buyer and Seller.

SECTION 7.\*

**HANDLING AND ERECTION**

The Buyer and/or Erector shall check all materials on arrival at job site and promptly report to Seller any discrepancies and/or damages. The Buyer and/or Erector shall comply with the requirements of the applicable Steel Joist Institute specification of latest adoption in the handling and erection of Material.

The Seller shall not be responsible for the condition of paint finish on Material if it is not properly protected after delivery.

The Seller shall not be responsible for improper fit of Material in the case in inaccurate finish dimensions of field construction work.

\* For thorough coverage of this topic, refer to SJI Technical Digest #9, "Handling and Erection of Steel Joists and Joist Girders".

SECTION 8.

**BUSINESS RELATIONS**

**8.1 PRESENTATION OF PROPOSALS**

All proposals for furnishing Material shall be made on a Sales Contract Form. After acceptance by the Buyer, these proposals must be approved or executed by a qualified official of the Seller. Upon such approval the proposal becomes a contract.

**8.2 ACCEPTANCE OF PROPOSALS**

All proposals are intended for prompt acceptance and are subject to change without notice.

**8.3 BILLING**

Contracts on a lump sum basis are to be billed proportionately as shipments are made.

**8.4 PAYMENT**

Payments shall be made in full on each invoice without retention.

**8.5 ARBITRATION**

All business controversies which cannot be settled by direct negotiations between Buyer and Seller shall be submitted to arbitration. Both parties shall sign a submission to arbitration and if possible agree upon an arbitrator. If they are unable to agree, each shall appoint an arbitrator and these two shall appoint a third arbitrator. The expenses of the arbitration shall be divided equally between the parties, unless otherwise provided for in the agreements to submit to arbitration. The arbitrators shall pass finally upon all questions, both of law and fact, and their findings shall be conclusive.



