TO: **MODIFIED BY EI 74-100 EFFECTIVE 10/29/1974; EI 76-047 EFFECTIVE 6/28/1976**
MAIN OFFICE

REGIONAL OFFICES
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ENGINEERING INSTRUCTION

NEW YORK STATE DEPARTMENT OF TRANSPORTATION

SUBJECT: Bridge Joints

Subject Code: 7.35

Distribution: ☒ Main Office ☒ Regions ☐ Special

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Supersedes:

APPROVED:

R. M. Kamp
Deputy Chief Engineer (Structures)

Attached is a copy of policy for bridge joints.

This policy is effective immediately and shall be used on all structures under design.

Section 21.18 of our Standard Details for Highway Bridges will be revised to include this policy.

A BDD sheet, showing the details of the Elastomeric Armored Joint, and a specification will be forwarded in the near future.

5/6/74

POLICY FOR BRIDGE JOINTS

The purpose of this instruction is to establish Department policy on bridge expansion joints.

This policy is divided into the following categories:

A. New Construction

   1. Steel

   2. Prestressed Concrete

B. Reconstruction - Rehabilitation

   1. Traffic Maintained

      a. Steel

      b. Prestressed Concrete

   2. Traffic Not Maintained

      a. Steel

      b. Prestressed Concrete

The priority for the type of joints is listed for each condition.

The use of joints other than as specified in this policy shall require the specific approval of the Deputy Chief Engineer (Structures).

NEW BRIDGES (STEEL)

ITEM NEW	ITEM OLD	TYPE	SPAN LENGTH	CONDITION	SKEW
15653.01	227	RA1	Unlimited	Fixed	No limit
" .02	"	RA2	0' to 60'-0"	Exp.	Up to 30°
" .03	"	RA3	60'-0" to 75'-0"	"	"
" .04	"	RA4	75'-0" to 90'-0"	"	"
" .05	"	RA5	90'-0" to 105'-0"	"	"
" .06	"	RA6	105'-0" to 136'-0"	"	"
	227C Elast.(Armored)		0' to 136'-0"	Exp.	Over 30° to no limit
15653.24	270B	200	136'-0" to 171'-0"	Exp.	No limit
" .25	"	250	171'-0" to 214'-0"	"	"
" .27	"	400	214'-0" to 342'-0"	"	"
" .32	"	650	342'-0" to 556'-0"	"	"
" .37	"	900	556'-0" to 769'-0"	"	"

Example:

Single Span 135'-0" over 30° skew

Fixed End - 227 RA1
Exp. End - 227C

Note: Temperature Range - Cold Climate

-30° F. to +120° F.

Coefficient of expansion = 6.5×10^{-6}

NEW BRIDGES (PRESTRESSED)

ITEM NEW	ITEM OLD	TYPE	SPAN LENGTH	CONDITION	SKEW
15653.01	227	RA1*	Unlimited	Fixed	No limit
" .02	"	RA2*	0' to 96'-0"	Exp.	Up to 30°
" .03	"	RA3*	96'-0" to 120'-0"	"	"
" .04	"	RA4*	120'-0" to 144'-0"	"	"
" .05	"	RA5*	144'-0" to 169'-0"	"	"
" .06	"	RA6*	169'-0" to 218'-0"	"	"
	227C*	Elast.(Armored)	0' to 218'-0"	Exp.	Over 30° to no limit
15653.24	270B	200	218'-0" to 275'-0"	Exp.	No limit
" .25	"	250	275'-0" to 344'-0"	"	"

* Box beams with 4" wearing surface - notch ends of beam 1" to allow for the placement of the joint.

Note: Temperature Range - Cold Climate

Temp. rise 35°F.

Temp. fall 45°F.

Coefficient of expansion = 6.0×10^{-6}

Example:

Single Span 115'-0" skew 25°

Fixed End - 227 RA1

Exp. End - 227 RA3 $(120^\circ - 68^\circ)$

Span Range Prestressed - Span Range Steel $\times \frac{52^\circ}{35^\circ} \times \frac{6.5 \times 10^{-6}}{6.0 \times 10^{-6}}$

$= 1.6095 \times$ Span Range Steel

TRAFFIC MAINTAINED

STEEL

ITEM NEW	ITEM OLD	TYPE	SPAN LENGTH	CONDITION	SKEW
	227C	Elastomeric (Armored)		Fixed	No limit
			0' to 136'-0"	Exp.	"
15653.24	270B	200	136'-0" to 171'-0"	Exp.	No limit
" .25	"	250	171'-0" to 214'-0"	"	"
" .27	"	400	214'-0" to 342'-0"	"	"
" .32	"	650	342'-0" to 556'-0"	"	"
" .37	"	900	556'-0" to 769'-0"	"	"

Example:

Single Span 213'-0" skew 35°

Fixed End - 227C

Exp. End - 270B 250

PRESTRESSED

227C*	Elastomeric (Armored)		Fixed	No limit
		0' to 206'-0"	Exp.	"
270B	200	206'-0" to 275'-0"	Exp.	No limit
"	250	275'-0" to 344'-0"	"	"

* Box beams with 4" wearing surface - notch ends of beam 1" to allow for the placement of the joint.

Example:

Single Span 250'-0" skew 15°

Fixed End - 227C

Exp. End - 270B 200

TRAFFIC NOT MAINTAINED

Follow policy for new construction for both STEEL and PRESTRESSED.