

Auckland Harbour Bridge Alliance

Special Structural Inspection Box Girder External Special

2020/2021



Auckland Harbour Bridge Alliance

Special Structural Inspection

Box Girder External Special 1 – 2020/2021

Inspection Details

Inspector	Date of Inspection
s 9(2)(a)	22-29/07/20

Quality Assurance Statement

Report Prepared by:	s 9(2)(a)	
Report Reviewed by:		
Approved for issue by:		
Issued to:		

Revision Schedule

Rev. No	Date	Description	Prepared by	Reviewed by	Approved by



Table of Contents

1 Scope 1

2 Condition Rating..... 1

3 Defects 4

 3.1 Box Girder External Special 1 4

Appendix A – Marking Code and Prioritisation of the Works 5

RELEASED UNDER THE OFFICIAL INFORMATION ACT 1982



1 Scope

The first of four Box Girder External Special inspections was undertaken in July 2020 as part of the 2020-2021 structural inspection programme. This inspection included the 3 monthly, 6 monthly and annual inspection items, which as stated in the special inspection register, are the:

- Crossbeam to web welds of the inner and outer cantilever on the box girders.
- Trough to deck welds at T-1 and T+9.
- Web to deck fillet welds.
- BGS longitudinal deck stiffener to crossbeam welds.

As part of the special inspection, weld cracks that are already known to us are also monitored. Weld cracks that have grown, if any, will be shown in this report. Any other new defects found on members that are not included as part of the special inspection items but are identified during this inspection will also be reported.

Table 1 and 2 provide a summary of the current crossbeam to web cracks and trough to deck cracks awaiting repair. A more detailed record of these defects, including information on when they were last reported can be found in the Inspection Box Girder Crack Register.

2 Condition Rating

One new trough to deck crack was found during this inspection. All the other cracks that we are aware of did not show any signs of growth.

Table 1 – To be repaired crossbeam to web cracks

Photo ID	Defect description	Priority
NA	NA	NA

Table 2 – To be repaired trough to deck cracks

Photo ID	Defect description	Priority
Previous report. BGEG-19/20	West inner. Box 9 crossbeam 2. Trough 11 east face. Trough to deck weld crack. 109mm in length.	M 1-2 Years
Previous report. BGEG-19/20	West Inner. Box 11 crossbeam 2. Trough 11 east face. Trough to deck weld crack. 120mm in length.	M 1-2 Years



Previous report. BGES3-19/20	West inner. Box 17 crossbeam 1. Trough 11. Trough to deck weld crack. 140mm in length.	M 1-2 Years
Previous report. BGES3-19/20	West inner. Box 21 crossbeam 1. Trough 11. Trough to deck weld crack. 210mm in length.	M 1-2 Years
Previous report. BGES3-19/20	West outer. Box 21 crossbeam 2. Trough -4. Trough to deck weld crack. 175mm in length.	H 1 Year
Previous report. BGES3-19/20	West inner. Box 21 crossbeam 2. Trough 11. Trough to deck weld crack. 225mm in length.	M 1-2 Years
Previous report. BGES3-19/20	West inner. Box 21 crossbeam 3. Trough 11. Trough to deck weld crack. 225mm in length.	M 1-2 Years
BG1-1 (This report)	West inner. Box 23. North side of crossbeam 2. Trough 11. Trough to deck weld crack 280mm in length.	M 1-2 Years
Previous report. BGES3-19/20	West inner. South side of box 23 crossbeam 3. Trough 11. Trough to deck weld crack. 230mm in length.	M 1-2 Years
Previous report. BGES3-19/20	West inner. Box 24 crossbeam 1. Trough 11. Trough to deck weld crack. 115mm in length.	M 1-2 Years
Previous report. BGES3-19/20	West inner. Box 25 crossbeam 2. Trough 11. Trough to deck weld crack. 225mm in length.	M 1-2 Years
Previous report. BGES3-19/20	West inner. North side of box 25 crossbeam 3. Trough 11. Trough to deck weld crack. 155mm in length.	M 1-2 Years
Previous report. BGES3-19/20	West inner. Box 27 crossbeam 3. Trough 11. Trough to deck weld crack. 175mm in length.	M 1-2 Years
Previous report. BGES3-19/20	West inner. Box 35 crossbeam 1. Trough 11. Trough to deck weld crack. 190mm in length.	M 1-2 Years



Previous report. BGES3-19/20	West inner. Box 35 crossbeam 2. Trough 11. Trough to deck weld crack. 200mm in length.	M 1-2 Years
Previous report. BGES2-19/20	West Inner. Box 50. 1.6m south of crossbeam 2. Trough to deck weld crack. 90mm in length.	H 1 Year
Previous report. BGES3-19/20	East inner. Box 9 crossbeam 2. Trough 11 west face. Trough to deck weld crack 170mm in length.	M 1-2 Years
Previous report. BGES3-19/20	East inner. Box 17 crossbeam 1. Trough 11. Trough to deck weld crack. 115mm in length.	M 1-2 Years
Previous report. BGES3-19/20	East inner. Box 17 crossbeam 2. Trough 11. Trough to deck weld crack. 115mm in length.	M 1-2 Years

Table 3 – Marking code

Mark	Priority	No. Defects
2	-	1
R	H	-
R	M	-
R	L	-
S	H	-
S	M	1
S	L	-
Total		2



3 Defects

3.1 Box Girder External Special 1

Photo ID	Marking Code	Description of Defects	Maintenance/ Repairs Recommendations	Maintenance/ Repairs Priority & Timeframe
BG-1	S	 <p>West inner. Box 23. North side of crossbeam 2. Trough 11. Trough to deck weld crack 280mm in length.</p>	Weld crack repair.	M 1-2 Years
BG-2	2	 <p>BGS deck stiffeners through BGS section. Distorted deck stiffeners.</p>	Monitor at next inspection	N/A

Appendix A – Marking Code and Prioritisation of the Works

Defects are categorised by marking code, as used in NZTA S6 *Bridges and other significant highway structures inspection policy*:

- 0** = Not inspected
- 1** = Satisfactory
- 2** = Monitor next inspection
- R** = Routine maintenance
- S** = Structural maintenance
- N** = Not applicable

The following timeframes are used for prioritising maintenance works:

- **High** – must be done as soon as possible, within 12 months
- **Medium** – preferable to do as soon as possible, within 1-2 years
- **Low** - no work required within the next 2 years

RELEASED UNDER THE OFFICIAL INFORMATION ACT 1982

