

/march 2020

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**Report 001**

# /condition inspection of 311-CV-1001

**EMSYS**  
Elektromechanische Systeme GmbH

scan/report by seth schurman

report approved by james normanton

## /summary

This is the second magnetic scan performed on this conveyor belt using the EMSYS BeltGuard system. The conveyor consists of approximately 9485 feet of steel cord belting. Overall, the magnetic testing shows 206 total events in comparison to the 115 total events from the previous report. These events could be the result of excess noise, corrosion, or possible edge damage. The conveyor belt is in average condition for the one year that it has been running with all larger events listed in the table of events.

Ten (10) 3-Stage splices were recorded in the data and all splices are estimated to be in average condition at the time of recording.

All magnetic events require inspection for exposed cables. Any exposed cables found should be trimmed and patched as necessary to avoid corrosion and weakening of the belting.



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# /new events

Overview march 2020 | damage results

belt length

**9,485**

feet

splices

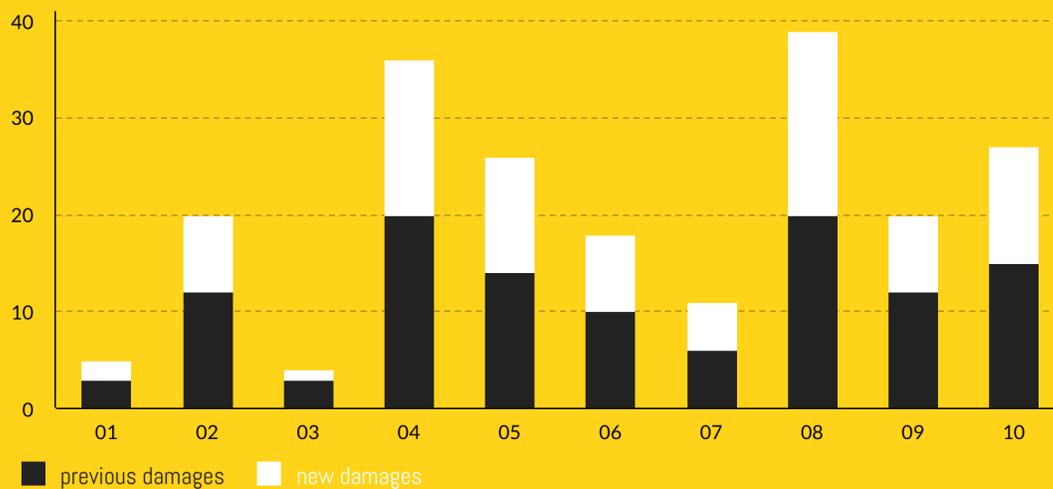
**10**

stage - 3

total events

**206**

estimated



## 1.0 introduction / 2.0 scope of work

At the request of \*\*\*\*, an MFL scan was carried out in March 2020 to determine the current condition of 311-cv-1001.

The inspection was undertaken within the Shaw Almex Service Group guidelines.

The inspection involved the following activities:

2.1 Comparative Inspection.

Magnetic Flux Inspection (MFI) was carried out on all splice and belt sections.

## **/3.0 results / 3.1 table of events**

The table below lists all the significant events in belt running order. The table summarizes the section of belting, distance from the previous splice, location on belting, and an estimated number of cords effected. At this time, all cords effected are estimated until accurate inspection/replacement of below events are accounted for.

<b>Splice Number</b>	<b>Event Number</b>	<b>Distance from Splice (ft)</b>	<b>Lateral Placement</b>	<b>Magnitude Lvl (V) Estimated Cords</b>
1	1	142	L	1.02 - 2
1	2	147	L	1.01 - 2
1	3	263	L	1.0 - 2
1	4	263	C	13.32 - 21
1	5	306	C	1.04 - 2
2	6	150	C	1.04 - 2
2	7	166	C	1.51 - 3
2	8	200	R	1.01 - 2
2	9	212	C	1.02 - 2
2	10	214	R	1.02 - 2
2	11	302	R	1.35 - 3

<b>Splice Number</b>	<b>Event Number</b>	<b>Distance from Splice (ft)</b>	<b>Lateral Placement</b>	<b>Magnitude Lvl (V) Estimated Cords</b>
2	<b>12</b>	320	R	1.0 - 2
2	<b>13</b>	418	C	1.01 - 2
2	<b>14</b>	522	R	1.30 - 2
2	<b>15</b>	602	C	1.03 - 2
2	<b>16</b>	611	L	1.05 - 2
2	<b>17</b>	621	R	1.02 - 2
2	<b>18</b>	650	R	1.04 - 2
2	<b>19</b>	707	R	1.01 - 2
2	<b>20</b>	715	C	1.04 - 2
2	<b>21</b>	732	R	1.01 - 2
2	<b>22</b>	744	C	1.11 - 2
2	<b>23</b>	780	L	1.02 - 2
2	<b>24</b>	805	R	1.01 - 2
2	<b>25</b>	830	C	1.20 - 2
3	<b>26</b>	88	C	1.20 - 2
3	<b>27</b>	110	L	1.01 - 2
3	<b>28</b>	167	C	1.11 - 2
3	<b>29</b>	255	R	1.04 - 2

<b>Splice Number</b>	<b>Event Number</b>	<b>Distance from Splice (ft)</b>	<b>Lateral Placement</b>	<b>Magnitude Lvl (V) Estimated Cords</b>
4	<b>30</b>	28	R	1.04 - 2
4	<b>31</b>	33	L	1.02 - 2
4	<b>32</b>	101	L	2.01 - 2
4	<b>33</b>	122	R	1.02 - 2
4	<b>34</b>	135	R	1.12 - 2
4	<b>35</b>	188	L	1.03 - 2
4	<b>36</b>	210	C	1.26 - 3
4	<b>37</b>	212	C	1.05 - 2
4	<b>38</b>	238	R	1.10 - 2
4	<b>39</b>	252	R	1.01 - 2
4	<b>40</b>	268	R	1.10 - 2
4	<b>41</b>	303	R	1.18 - 2
4	<b>42</b>	310	C	1.17 - 2
4	<b>43</b>	315	R	1.09 - 2
4	<b>44</b>	333	R	1.04 - 2
4	<b>45</b>	335	C	1.20 - 2
4	<b>46</b>	426	C	1.06 - 2
4	<b>47</b>	484	R	1.04 - 2

<b>Splice Number</b>	<b>Event Number</b>	<b>Distance from Splice (ft)</b>	<b>Lateral Placement</b>	<b>Magnitude Lvl (V) Estimated Cords</b>
4	<b>48</b>	626	C	1.50 - 3
4	<b>49</b>	630	C	1.02 - 2
4	<b>50</b>	667	L	1.01 - 2
4	<b>51</b>	802	R	1.09 - 2
4	<b>52</b>	845	R	1.15 - 2
4	<b>53</b>	855	R	1.30 3
4	<b>54</b>	870	C	1.30 - 3
4	<b>55</b>	888	C	1.50 - 3
4	<b>56</b>	910	C	1.02 - 2
4	<b>57</b>	912	L	1.01 - 2
4	<b>58</b>	956	R	1.20 - 2
4	<b>59</b>	988	L	1.20 - 2
4	<b>60</b>	1,002	L	1.02 - 2
4	<b>61</b>	1,115	R	1.05 - 2
4	<b>62</b>	1,200	R	1.08 - 2
4	<b>63</b>	1,245	C	1.03 - 2
4	<b>64</b>	1,255	L	1.04- 2
4	<b>65</b>	1,268	R	1.05- 2

<b>Splice Number</b>	<b>Event Number</b>	<b>Distance from Splice (ft)</b>	<b>Lateral Placement</b>	<b>Magnitude Lvl (V) Estimated Cords</b>
4	<b>66</b>	1,278	L	1.70 - 3
4	<b>67</b>	1,284	L	1.60 - 3
4	<b>68</b>	1,302	R	1.02 - 2
4	<b>69</b>	1,340	R	1.10 - 2
4	<b>70</b>	1,355	L	1.51 - 3
4	<b>71</b>	1,358	R	1.02 - 2
4	<b>72</b>	1,420	C	1.20 - 2
4	<b>73</b>	1,444	C	1.60 - 3
4	<b>74</b>	1,460	C	1.01 - 2
5	<b>75</b>	75	L	1.05 - 2
5	<b>76</b>	81	L	2.75 - 6
5	<b>77</b>	222	L	1.10 - 2
5	<b>78</b>	324	C	1.05 - 2
5	<b>79</b>	333	C	1.20 - 2
5	<b>80</b>	386	C	1.15 - 2
5	<b>81</b>	456	C	1.20 - 2
5	<b>82</b>	507	R	1.10 - 2
5	<b>83</b>	515	C	1.08 - 2

<b>Splice Number</b>	<b>Event Number</b>	<b>Distance from Splice (ft)</b>	<b>Lateral Placement</b>	<b>Magnitude Lvl (V) Estimated Cords</b>
5	<b>84</b>	632	C	1.10 - 2
5	<b>85</b>	655	R	1.05 - 2
5	<b>86</b>	778	R	1.50 - 3
5	<b>87</b>	782	C	1.06 - 2
5	<b>88</b>	912	C	1.20 - 2
5	<b>89</b>	958	C	1.02 - 2
5	<b>90</b>	1,005	L	1.50 - 3
5	<b>91</b>	1,126	L	1.04 - 2
5	<b>92</b>	1,162	C	1.20 - 2
5	<b>93</b>	1,173	C	1.09 - 2
5	<b>94</b>	1,181	R	1.10 - 2
5	<b>95</b>	1,198	R	1.21 - 2
5	<b>96</b>	1,209	L	1.30 - 3
5	<b>97</b>	1,428	C	1.05 - 2
5	<b>98</b>	1,455	C	1.02 - 2
5	<b>99</b>	1,459	C	1.05 - 2
5	<b>100</b>	1,512	L	1.55 - 3
6	<b>101</b>	387	R	1.52 - 2

<b>Splice Number</b>	<b>Event Number</b>	<b>Distance from Splice (ft)</b>	<b>Lateral Placement</b>	<b>Magnitude Lvl (V) Estimated Cords</b>
6	<b>102</b>	411	C	1.08 - 2
6	<b>103</b>	420	L	1.51 - 3
6	<b>104</b>	436	L	1.10 - 2
6	<b>105</b>	512	C	1.15 - 2
6	<b>106</b>	569	C	1.12 - 2
6	<b>107</b>	622	C	1.02 - 2
6	<b>108</b>	762	L	1.05 - 2
6	<b>109</b>	788	C	1.10 - 2
6	<b>110</b>	793	R	2.05 - 4
6	<b>111</b>	849	C	1.05 - 2
6	<b>112</b>	857	C	1.08 - 2
6	<b>113</b>	910	R	1.40 - 3
6	<b>114</b>	968	L	1.42 - 3
6	<b>115</b>	968	R	1.20 - 2
6	<b>116</b>	999	R	1.06 - 2
6	<b>117</b>	1,080	C	1.30 - 3
6	<b>118</b>	1,150	L	1.10 - 2
7	<b>119</b>	153	R	1.10 - 2

<b>Splice Number</b>	<b>Event Number</b>	<b>Distance from Splice (ft)</b>	<b>Lateral Placement</b>	<b>Magnitude Lvl (V) Estimated Cords</b>
7	<b>120</b>	164	L	1.01 - 2
7	<b>121</b>	216	R	2.01 - 4
7	<b>122</b>	302	L	1.02 - 2
7	<b>123</b>	355	C	1.05 - 2
7	<b>124</b>	355	R	1.06 - 2
7	<b>125</b>	360	L	1.10 - 2
7	<b>126</b>	385	L	1.11 - 2
7	<b>127</b>	390	C	1.03 - 2
7	<b>128</b>	412	C	1.04 - 2
7	<b>129</b>	420	L	1.02 - 2
8	<b>130</b>	149	L	1.05 - 2
8	<b>131</b>	203	L	1.60 - 3
8	<b>132</b>	289	L	1.08 - 2
8	<b>133</b>	314	L	2.51 - 5
8	<b>134</b>	521	C	1.07 - 2
8	<b>135</b>	556	C	1.16 - 2
8	<b>136</b>	674	C	1.10 - 2
8	<b>137</b>	688	R	1.11 - 2

<b>Splice Number</b>	<b>Event Number</b>	<b>Distance from Splice (ft)</b>	<b>Lateral Placement</b>	<b>Magnitude Lvl (V) Estimated Cords</b>
8	<b>138</b>	690	R	1.20 - 2
8	<b>139</b>	695	C	1.07 - 2
8	<b>140</b>	710	C	1.16 - 2
8	<b>141</b>	711	L	1.02 - 2
8	<b>142</b>	720	L	1.10 - 2
8	<b>143</b>	721	C	1.03 - 2
8	<b>144</b>	725	R	1.07 - 2
8	<b>145</b>	755	L	1.20 - 2
8	<b>146</b>	766	L	1.02 - 2
8	<b>147</b>	782	L	1.11 - 2
8	<b>148</b>	788	R	1.16 - 2
8	<b>149</b>	795	C	1.07 - 2
8	<b>150</b>	800	C	1.03 - 2
8	<b>151</b>	805	L	1.20 - 2
8	<b>152</b>	809	L	1.10 - 2
8	<b>153</b>	815	L	1.10 - 2
8	<b>154</b>	822	C	1.08 - 2
8	<b>155</b>	845	R	1.50 - 3

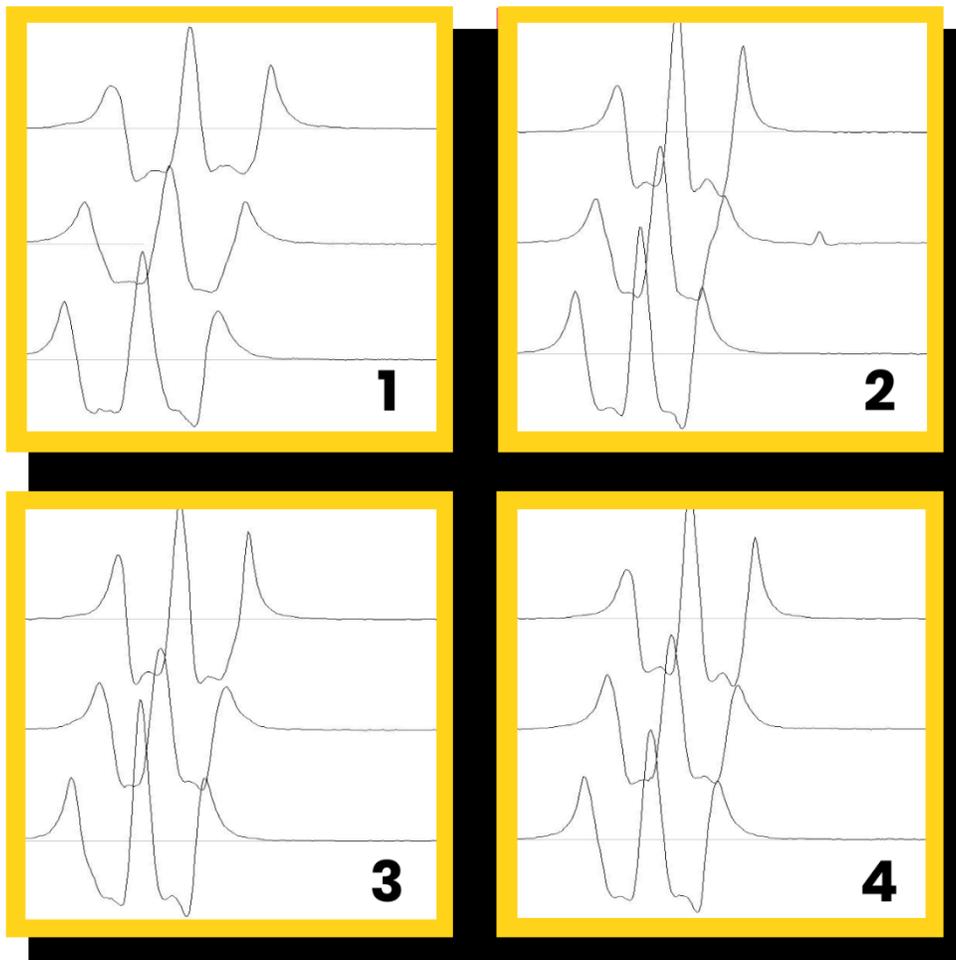
<b>Splice Number</b>	<b>Event Number</b>	<b>Distance from Splice (ft)</b>	<b>Lateral Placement</b>	<b>Magnitude Lvl (V) Estimated Cords</b>
8	<b>156</b>	855	C	1.02 - 2
8	<b>157</b>	869	L	1.16 - 2
8	<b>158</b>	875	C	1.20 - 2
8	<b>159</b>	888	L	1.10 - 2
8	<b>160</b>	899	C	1.11 - 2
8	<b>161</b>	915	C	1.07 - 2
8	<b>162</b>	933	R	1.08 - 2
9	<b>163</b>	25	L	1.06 - 2
9	<b>164</b>	107	L	1.25 - 3
9	<b>165</b>	155	C	1.28 - 3
9	<b>166</b>	188	R	1.08 - 2
9	<b>167</b>	199	L	1.08 - 2
9	<b>168</b>	206	L	1.06 - 2
9	<b>169</b>	220	C	1.10 - 2
9	<b>170</b>	238	L	1.20 - 2
9	<b>171</b>	315	C	1.16 - 2
9	<b>172</b>	333	C	1.02 - 2
9	<b>173</b>	348	C	1.11 - 2

<b>Splice Number</b>	<b>Event Number</b>	<b>Distance from Splice (ft)</b>	<b>Lateral Placement</b>	<b>Magnitude Lvl (V) Estimated Cords</b>
9	<b>174</b>	366	R	1.10 - 2
9	<b>175</b>	380	L	1.02 - 2
9	<b>176</b>	412	L	1.16 - 2
9	<b>177</b>	482	L	1.08 - 2
9	<b>178</b>	555	R	1.07 - 2
9	<b>179</b>	577	R	1.03 - 2
9	<b>180</b>	656	C	1.03 - 2
9	<b>181</b>	777	R	1.02 - 2
9	<b>182</b>	796	C	1.10 - 2
10	<b>183</b>	112	R	1.50 - 3
10	<b>184</b>	140	C	1.11 - 2
10	<b>185</b>	188	L	1.20 - 2
10	<b>186</b>	205	C	1.08 - 2
10	<b>187</b>	255	R	1.07 - 2
10	<b>188</b>	270	C	1.20 - 2
10	<b>189</b>	299	C	1.11 - 2
10	<b>190</b>	320	C	1.50 - 3
10	<b>191</b>	333	L	1.02 - 2

<b>Splice Number</b>	<b>Event Number</b>	<b>Distance from Splice (ft)</b>	<b>Lateral Placement</b>	<b>Magnitude Lvl (V) Estimated Cords</b>
10	<b>192</b>	378	L	1.02 - 2
10	<b>193</b>	456	C	1.10 - 2
10	<b>194</b>	488	C	1.03 - 2
10	<b>195</b>	510	C	1.08 - 2
10	<b>196</b>	533	C	1.07 - 2
10	<b>197</b>	588	L	1.20 - 2
10	<b>198</b>	606	R	1.11 - 2
10	<b>199</b>	680	L	1.02 - 2
10	<b>200</b>	690	C	1.10 - 2
10	<b>201</b>	695	C	1.08 - 2
10	<b>202</b>	740	C	1.11 - 2
10	<b>203</b>	755	C	1.20 - 2
10	<b>204</b>	766	C	1.10 - 2
10	<b>205</b>	781	R	1.02 - 2
10	<b>206</b>	851	R	1.07 - 2

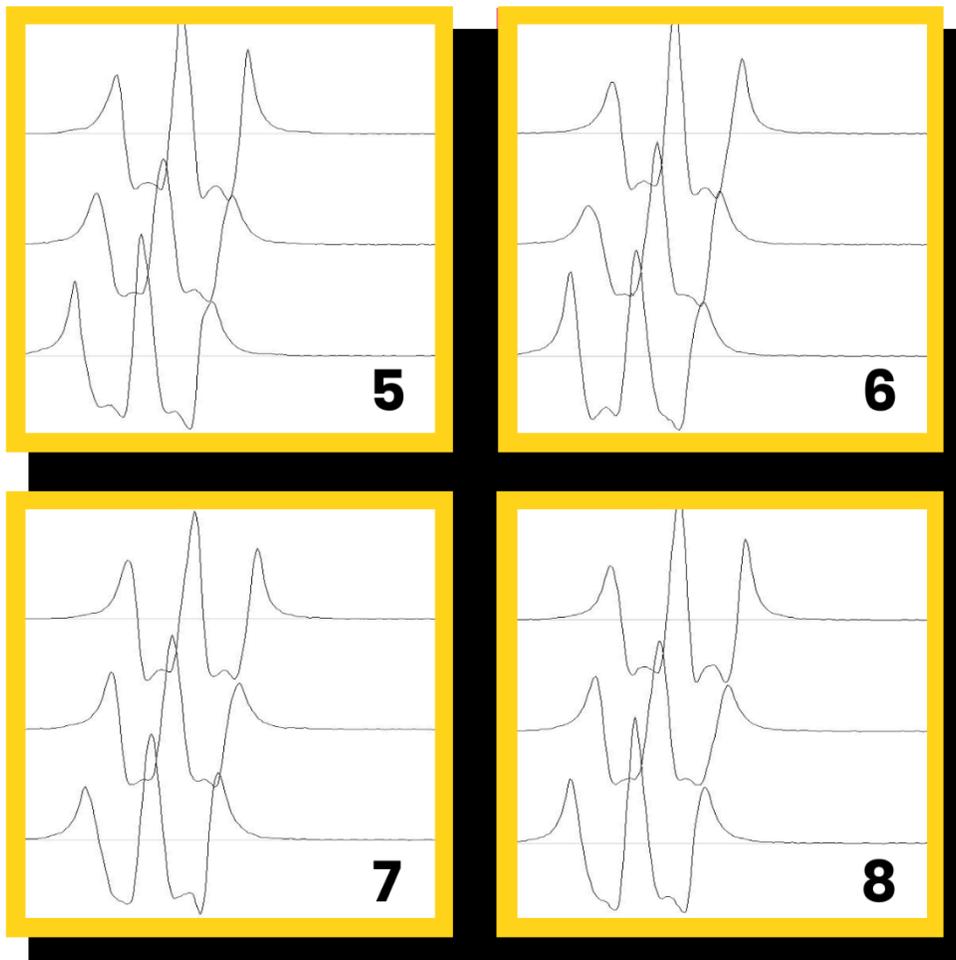
## **/3.2 splice condition /3.3 images**

splices 1 - 4



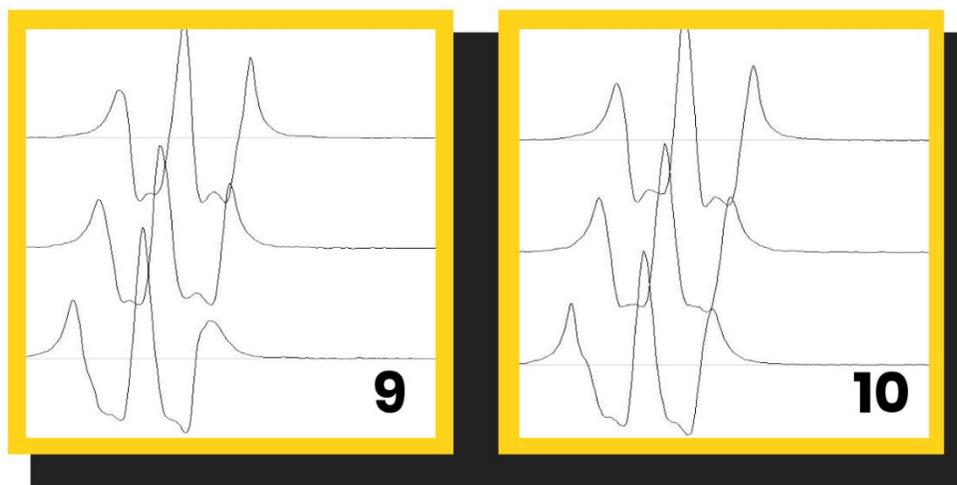
# /splice condition images

splices 5 - 8



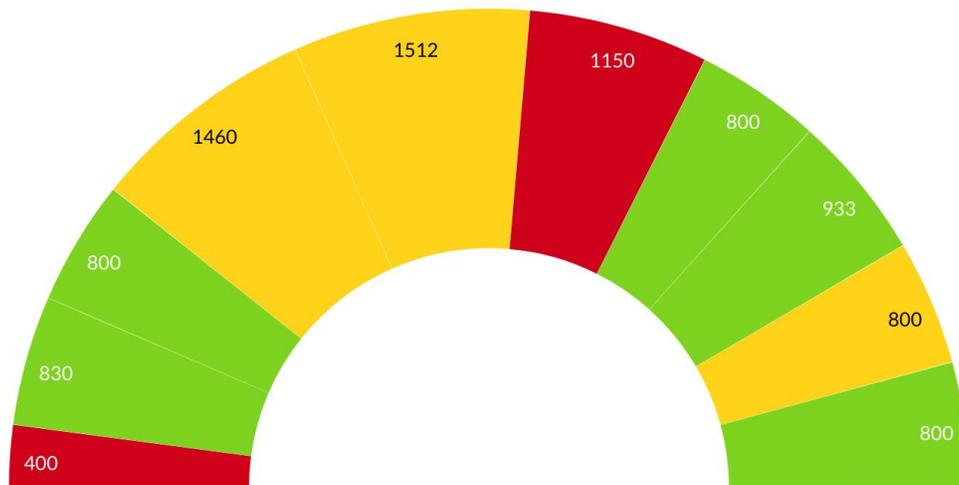
## **/splice condition images**

splices 9 - 10



■ All ten splices are considered to be in average condition with no anomalies to report at the time of testing. This is the first MFL scan to be performed on CV 311 and will be used as a baseline for future scan comparisons.

## **/3.4 roll condition**



- section 1 (400') (4.22%)
- section 2 (830') (8.75%)
- section 3 (800') (8.43%)
- section 4 (1460') (15.39%)
- section 5 (1512') (15.94%)
- section 6 (1150') (12.12%)
- section 7 (800') (8.43%)
- section 8 (933') (9.84%)
- section 9 (800') (8.43%)
- section 10 (800') (8.43%)

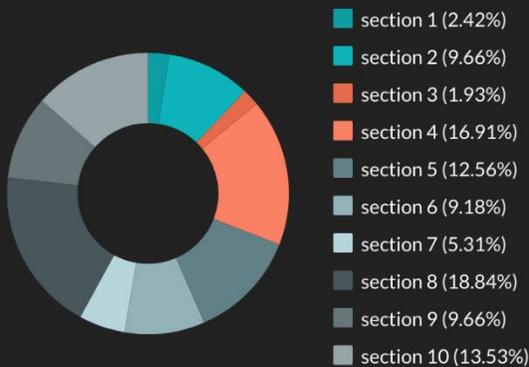
each section of belting is color coded to represent the severity of damages within that section. Colors meaning green being good, yellow being average, and red being below average and in need of immediate attention. Please refer to table of events for location of all larger damages.

## /conveyor details

### Belt Properties

Supplier	Sempertrans	Number of Splices	10
Commissioning	March 2020	Splice Make-up	3 stage
Belt Rating	ST4500		
Belt Width	2600 mm		
Belt Speed	3.95 m/sec		
Belt Cycle Time	9min 57sec		
Inspection Speed	3.95 m/sec		
Carry Cover Thickness	22 mm		
Pulley Cover Thickness	8 mm		
Total Belt Thickness	39.3 mm		
Cover Grade	X-MPL		
Weight of Belting	160.4 kg/m		

## /belt map



percentages are based on each section of belt's total overall damages

# /condition inspection of 311-CV-1001



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