Supplemental Information for:
Microgel Film Dynamics Modulate Cell Adhesion Behavior

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Figure S1. Reaction scheme for EDC/NHS film cross-linking treatment of PEI films.
Figure S2. Brightfield microscopy images for self-healing assessment of BIS/pDADMAC 4 layer films after exposure to cell culture medium. (a-c) untreated (d-f) crosslink-treated. (a,d) before damage (b,e) after 30% linear strain applied (c,f) healed with water after damage.

Figure S3. Brightfield microscopy images for self-healing assessment of BIS/PEI 4 layer films after exposure to cell culture medium. (a-c) untreated (d-f) crosslink-treated. (a,d) before damage (b,e) after 60% linear strain applied (c,f) healed with water after damage.
**Figure S4.** Intra- and inter-sample variability for AFM force maps for each type of film. Each column represents one force map with error bars representing the standard deviation of moduli within the map.

**Table S1.** Dynamic light scattering results for microgels used in this study. All data were collected at 25 °C in either PBS (pH 7.4) or Formate buffer (pH 3.0).

<table>
<thead>
<tr>
<th>Microgel</th>
<th>$R_h$, nm (pH 3.0)</th>
<th>$R_h$, nm (pH 7.4)</th>
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<tbody>
<tr>
<td>pNIPAm, BIS, Aac</td>
<td>239 ± 77</td>
<td>524 ± 104</td>
</tr>
<tr>
<td>pNIPAm, PEGDA, Aac</td>
<td>277 ± 25</td>
<td>510 ± 31</td>
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Figure S5. Film thickness as determined via atomic force microscopy in air.