



UNIVERSITAT POLITÈCNICA DE CATALUNYA
ESCOLA TÈCNICA SUPERIOR D'ENGINYERS
DE CAMINS, CANALS I PORTS DE BARCELONA



ESTUDIO EXPERIMENTAL
DEL COMPORTAMIENTO DEL HORMIGÓN
CONFINADO SOMETIDO A COMPRESIÓN

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Dirigida por:
Ravindra Gettu
Joan Ramon Casas Rius

Barcelona, Septiembre 2002

Figura H.1 Modos de rotura del hormigón HF30 confinado con FRP de vidrio


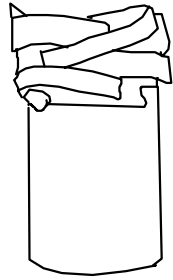

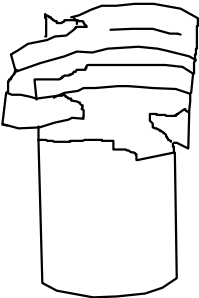

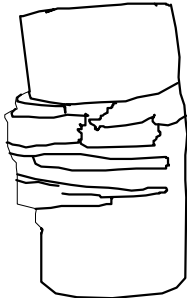

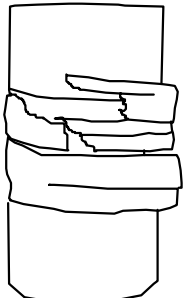

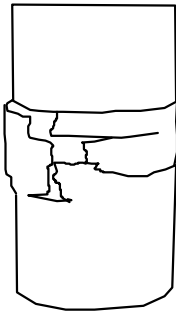

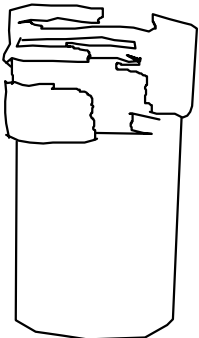
Confinamiento	Probeta		Probeta	
1 capa				
3 capas				
6 capas				

Figura H.2 Modos de rotura del hormigón HF30 confinado con FRP de carbono


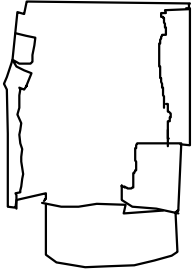

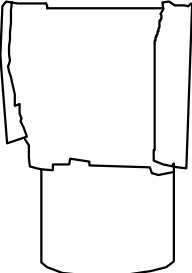



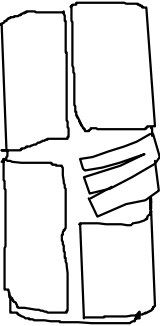

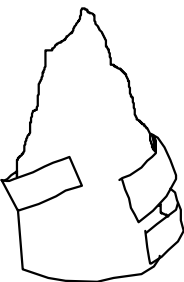


Confinamiento	Probeta		Probeta	
1 capa				
3 capas				
6 capas				
				

Figura H.3 Modos de rotura del hormigón HF70 confinado con FRP de vidrio


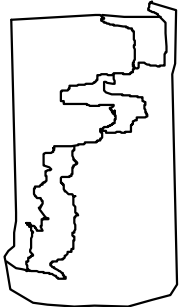

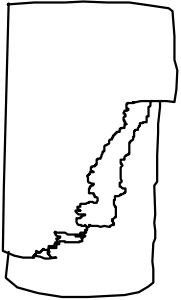

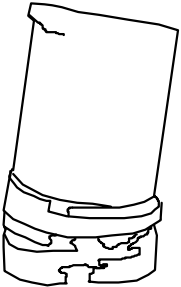
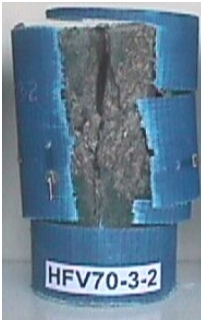
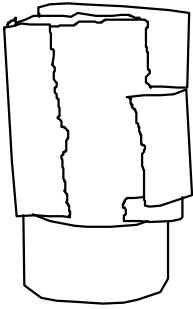

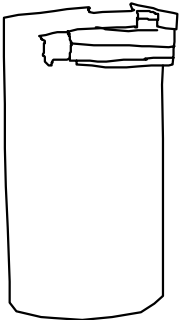

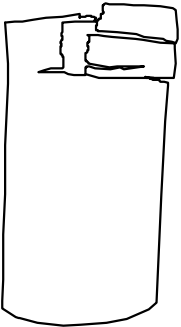
Confinamiento	Probeta		Probeta	
1 capa				
3 capas				
6 capas				

Figura H.3 Modos de rotura del hormigón HF70 confinado con FRP de vidrio (cont.)


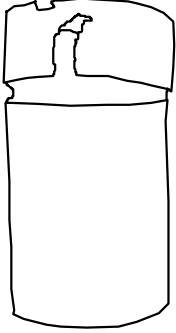

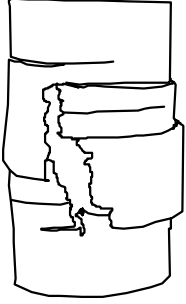

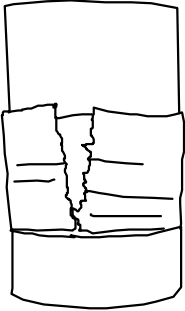

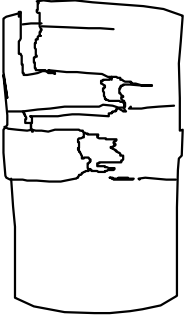
Confinamiento	Probeta		Probeta	
9 capas	 <p>HFV70-9-1</p>		 <p>HFV70-9-2</p>	
12 capas	 <p>HFV70-12-1</p>		 <p>HFV70-12-3</p>	

Figura H.4 Modos de rotura del hormigón HF70 confinado con FRP de carbono




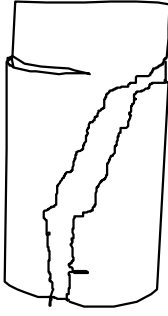

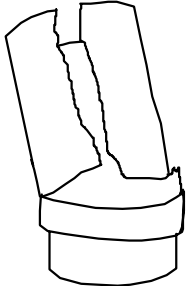

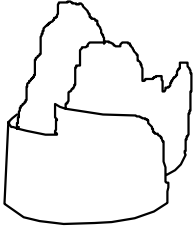

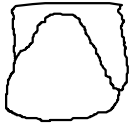

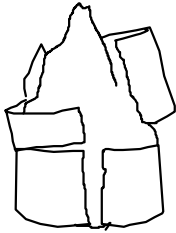
Confinamiento	Probeta		Probeta	
1 capa				
3 capas				
				
6 capas				
				

Figura H.4 Modos de rotura del hormigón HF70 confinado con FRP de carbono (cont.)


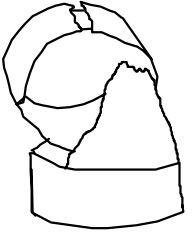





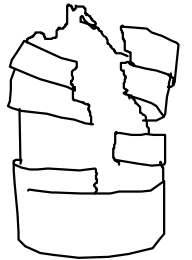
Confinamiento	Probeta		Probeta	
9 capas				
				
12 capas				
				

Figura H.5 Esquemas de rotura de los hormigones bajo diferentes capas de FRP

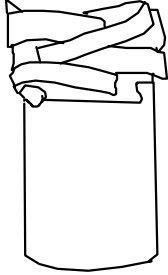
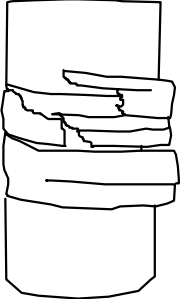
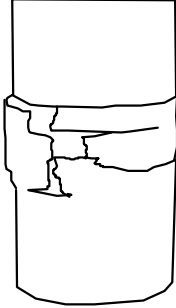
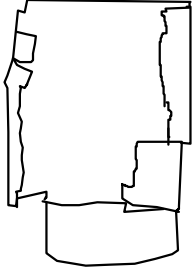
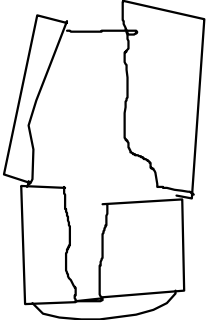
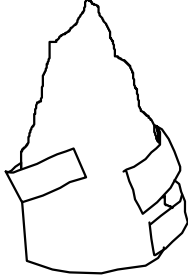
Hormigón HF30 confinado con FRP de vidrio			
1 capa	3 capas	6 capas	Observaciones
 <p>HFV30-1-1</p>	 <p>HFV30-3-2</p>	 <p>HFV30-6-1</p>	<p>Rotura repentina y explosiva (leve). Rotura perpendicular a la fibra. Presencia de macrogrietas. La probeta permanece relativamente sólida después del ensayo.</p>
Hormigón HF30 confinado con FRP de carbono			
1 capa	3 capas	6 capas	Observaciones
 <p>HFC30-1-1</p>	 <p>HFC30-3-1</p>	 <p>HFC30-6-1</p>	<p>Rotura repentina y explosiva (severa). Rotura del FRP a todo lo largo de la probeta.</p>

Figura H.5 Esquemas de rotura de los hormigones bajo diferentes capas de FRP (cont.)

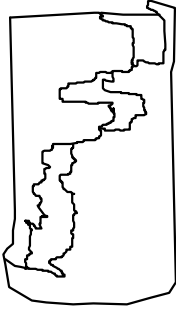
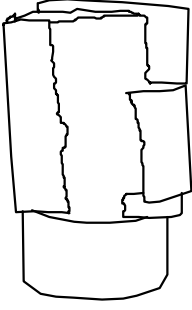
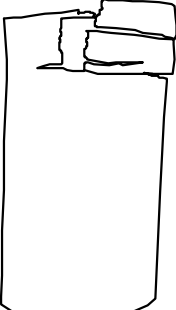


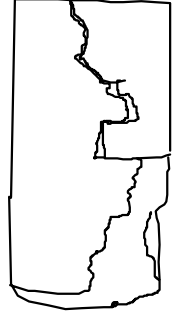


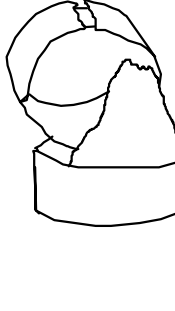



Hormigón HF70 confinado con FRP de vidrio				
1 capa	3 capas	6 capas	9 capas	12 capas
				
HFV70-1-2	HFV70-3-2	HFV70-6-2	HFV70-9-2	HFV70-12-3
Hormigón HF70 confinado con FRP de carbono				
1 capa	3 capas	6 capas	9 capas	12 capas
				
HFC70-1-2	HFC70-3-3	HFC70-6-2	HFC70-9-1	HFC70-12-2

Figura H.6 Esquemas de rotura de los hormigones bajo diferentes capas de FRP

Hormigón HF30 confinado con FRP de vidrio				
1 capa	3 capas	6 capas	9 capas	12 capas
 HFV30-1-1	 HFV30-3-2	 HFV30-6-1		
Hormigón HF30 confinado con FRP de carbono				
1 capa	3 capas	6 capas	9 capas	12 capas
 HFC30-1-1	 HFC30-3-1	Rotura total		
Hormigón HF70 confinado con FRP de vidrio				
1 capa	3 capas	6 capas	9 capas	12 capas
 HFV70-1-2	 HFV70-3-2	 HFV70-6-2	 HFV70-9-1	 HFV70-12-3
Hormigón HF70 confinado con FRP de carbono				
1 capa	3 capas	6 capas	9 capas	12 capas
 HFC70-1-2	Rotura total	Rotura total	Rotura total	Rotura total