

Anexo 6: Presupuesto General para Muros de Hormigón Armado variando la altura

PRESUPUESTO GENERAL

Moneda: Bolivianos

DESCRIPCIÓN	UND.	CANTIDAD	PRECIO UNITARIO	COSTO PARCIAL	COSTO TOTAL
MURO DE HORMIGON ARMADO (H=5m)					
EXCAVACION CON RETROEXCAVADORA	M3	18.22	37.48	682.81	
MURO DE HORMIGON ARMADO	M3	3.35	3,545.36	11,876.96	
RELLENO Y COMPACTADO	M3	14.87	283.70	4,217.78	
TOTAL					16,777.55
MURO DE HORMIGON ARMADO (H=6m)					
EXCAVACION CON RETROEXCAVADORA	M3	26.14	37.48	979.87	
MURO DE HORMIGON ARMADO	M3	4.68	3,545.36	16,592.28	
RELLENO Y COMPACTADO	M3	21.46	283.70	6,088.92	
TOTAL					23,661.07
MURO DE HORMIGON ARMADO (H=7m)					
EXCAVACION CON RETROEXCAVADORA	M3	35.65	37.48	1,336.33	
MURO DE HORMIGON ARMADO	M3	6.39	3,545.36	22,645.99	
RELLENO Y COMPACTADO	M3	29.27	283.70	8,302.60	
TOTAL					32,284.91
MURO DE HORMIGON ARMADO (H=8m)					
EXCAVACION CON RETROEXCAVADORA	M3	46.64	37.48	1,747.98	
MURO DE HORMIGON ARMADO	M3	8.36	3,545.36	29,639.21	
RELLENO Y COMPACTADO	M3	38.28	283.70	10,858.79	
TOTAL					42,245.98
MURO DE HORMIGON ARMADO (H=9m)					
EXCAVACION CON RETROEXCAVADORA	M3	59.09	37.48	2,214.82	
MURO DE HORMIGON ARMADO	M3	10.60	3,545.36	37,571.95	
RELLENO Y COMPACTADO	M3	48.49	283.70	13,757.52	
TOTAL					53,544.30
MURO DE HORMIGON ARMADO (H=10m)					
EXCAVACION CON RETROEXCAVADORA	M3	73.02	37.48	2,736.84	
MURO DE HORMIGON ARMADO	M3	13.10	3,545.36	46,444.22	
RELLENO Y COMPACTADO	M3	59.92	283.70	16,998.77	
TOTAL					66,179.83
MURO DE HORMIGON ARMADO (H=11m)					
EXCAVACION CON RETROEXCAVADORA	M3	87.87	37.48	3,293.44	
MURO DE HORMIGON ARMADO	M3	15.81	3,545.36	56,061.01	
RELLENO Y COMPACTADO	M3	72.05	283.70	20,442.13	
TOTAL					79,796.58
MURO DE HORMIGON ARMADO (H=12m)					
EXCAVACION CON RETROEXCAVADORA	M3	104.69	37.48	3,923.96	
MURO DE HORMIGON ARMADO	M3	18.84	3,545.36	66,794.58	
RELLENO Y COMPACTADO	M3	85.85	283.70	24,355.68	
TOTAL					95,074.22

Anexo 7: Presupuesto General para Muros de Hormigón en Masa variando la altura

PRESUPUESTO GENERAL

Moneda: Bolivianos

DESCRIPCIÓN	UND.	CANTIDAD	PRECIO UNITARIO	COSTO PARCIAL	COSTO TOTAL
MURO DE HORMIGON EN MASA (H=5m)					
EXCAVACION CON RETROEXCAVADORA	M3	17.88	37.48	670.30	
MURO DE HORMIGON EN MASA	M3	6.46	1,654.75	10,689.69	
RELLENO Y COMPACTADO	M3	11.42	283.70	3,240.82	
TOTAL					14,600.82
MURO DE HORMIGON EN MASA (H=6m)					
EXCAVACION CON RETROEXCAVADORA	M3	25.81	37.48	967.48	
MURO DE HORMIGON EN MASA	M3	9.39	1,654.75	15,536.13	
RELLENO Y COMPACTADO	M3	16.42	283.70	4,659.28	
TOTAL					21,162.89
MURO DE HORMIGON EN MASA (H=7m)					
EXCAVACION CON RETROEXCAVADORA	M3	35.19	37.48	1,319.04	
MURO DE HORMIGON EN MASA	M3	12.86	1,654.75	21,285.39	
RELLENO Y COMPACTADO	M3	22.33	283.70	6,334.52	
TOTAL					28,938.95
MURO DE HORMIGON EN MASA (H=8m)					
EXCAVACION CON RETROEXCAVADORA	M3	47.22	37.48	1,769.95	
MURO DE HORMIGON EN MASA	M3	17.56	1,654.75	29,049.48	
RELLENO Y COMPACTADO	M3	29.67	283.70	8,416.33	
TOTAL					39,235.76
MURO DE HORMIGON EN MASA (H=9m)					
EXCAVACION CON RETROEXCAVADORA	M3	62.91	37.48	2,358.15	
MURO DE HORMIGON EN MASA	M3	24.15	1,654.75	39,962.24	
RELLENO Y COMPACTADO	M3	38.76	283.70	10,997.55	
TOTAL					53,317.94
MURO DE HORMIGON EN MASA (H=10m)					
EXCAVACION CON RETROEXCAVADORA	M3	79.22	37.48	2,969.40	
MURO DE HORMIGON EN MASA	M3	31.11	1,654.75	51,479.30	
RELLENO Y COMPACTADO	M3	48.11	283.70	13,649.49	
TOTAL					68,098.19
MURO DE HORMIGON EN MASA (H=11m)					
EXCAVACION CON RETROEXCAVADORA	M3	102.61	37.48	3,846.09	
MURO DE HORMIGON EN MASA	M3	41.89	1,654.75	69,321.66	
RELLENO Y COMPACTADO	M3	60.72	283.70	17,226.19	
TOTAL					90,393.94
MURO DE HORMIGON EN MASA (H=12m)					
EXCAVACION CON RETROEXCAVADORA	M3	123.97	37.48	4,646.52	
MURO DE HORMIGON EN MASA	M3	52.19	1,654.75	86,357.32	
RELLENO Y COMPACTADO	M3	71.78	283.70	20,363.97	
TOTAL					111,367.81

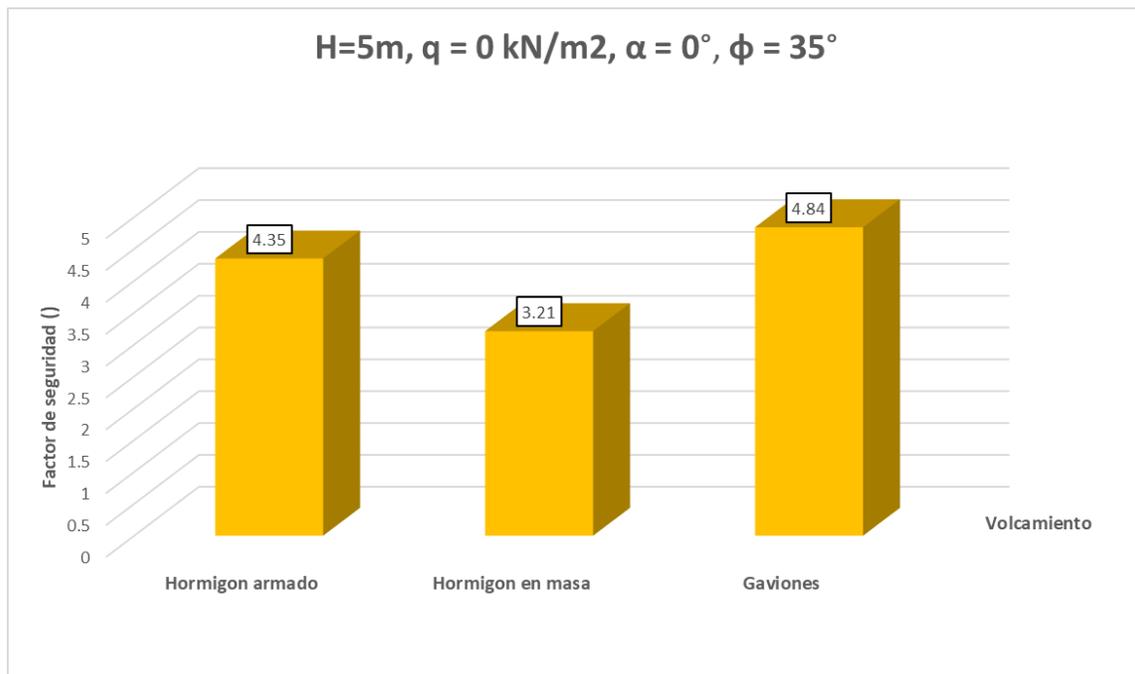
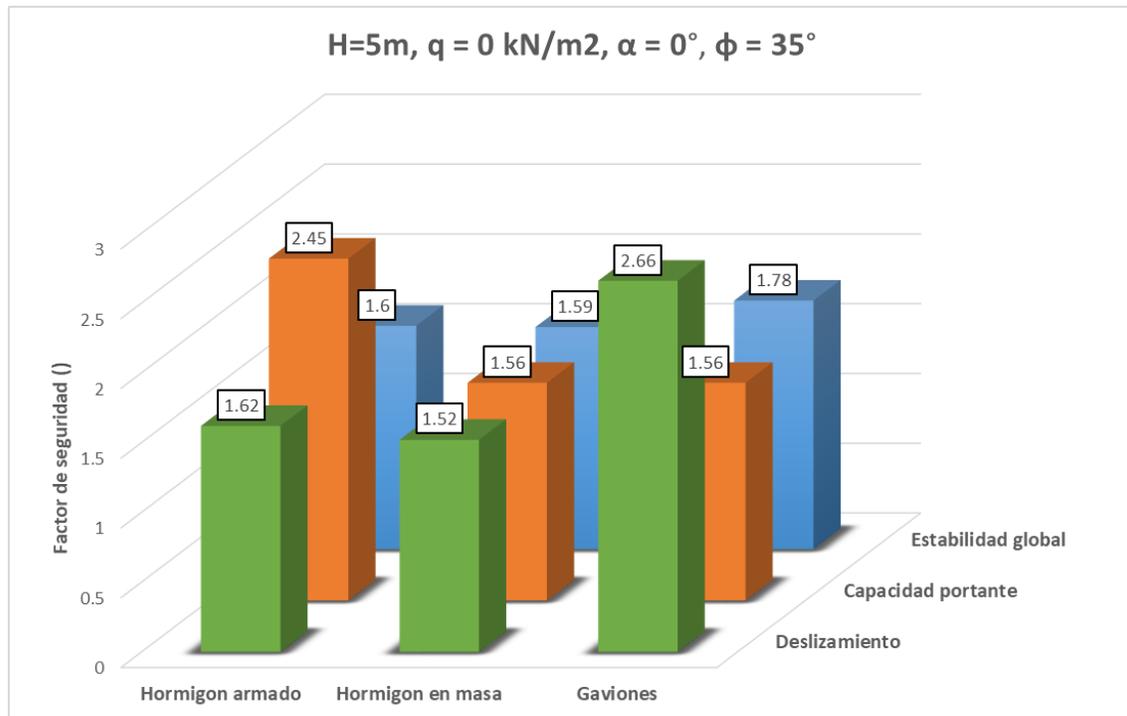
Anexo 8: Presupuesto General para Gaviones variando la altura

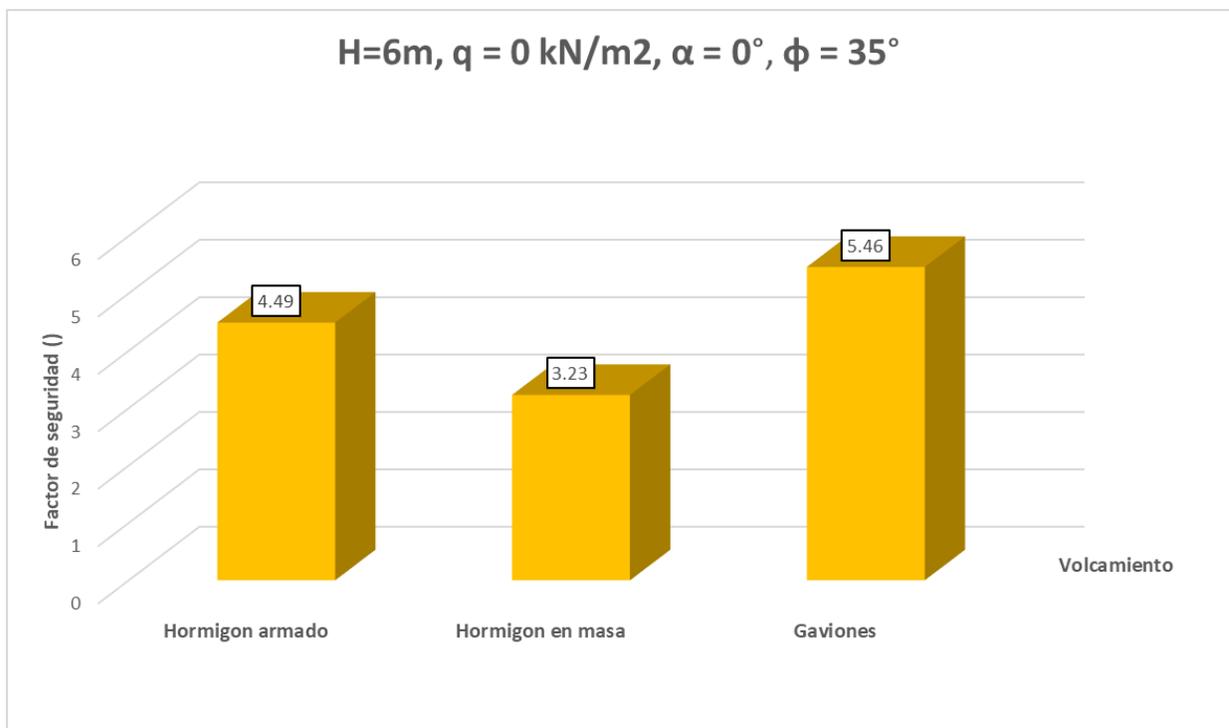
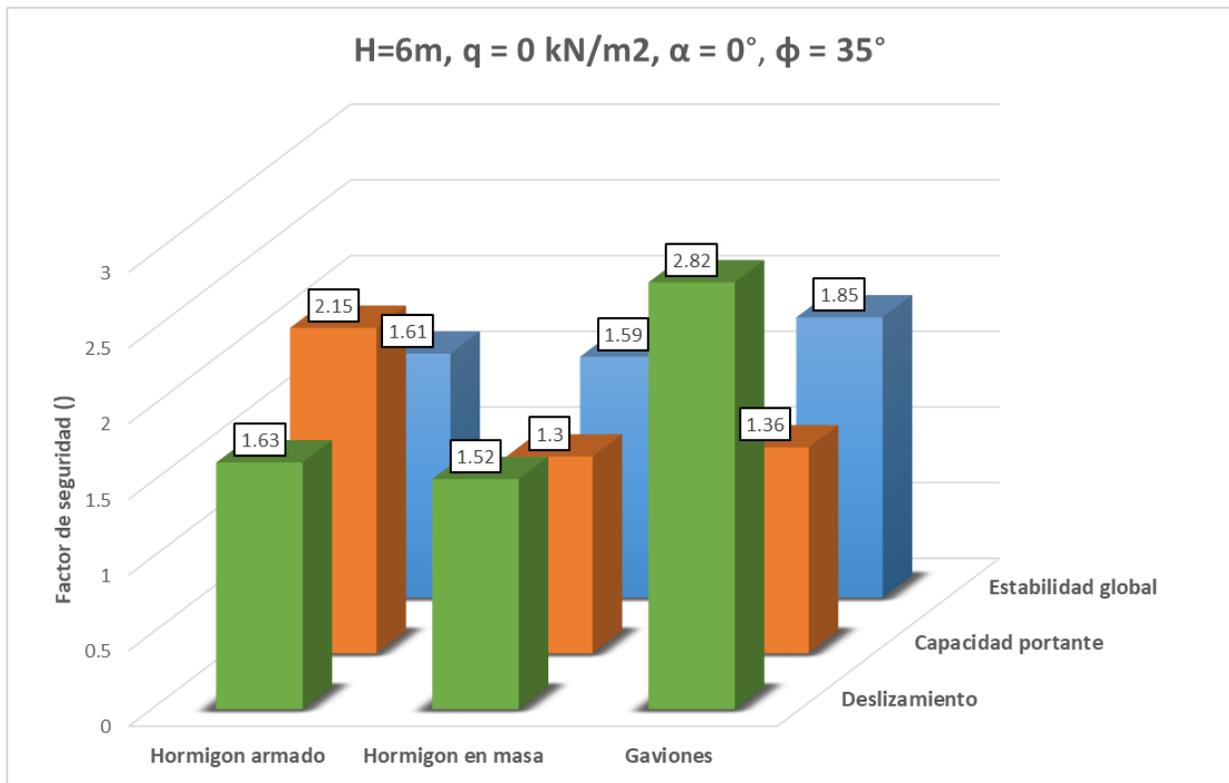
PRESUPUESTO GENERAL

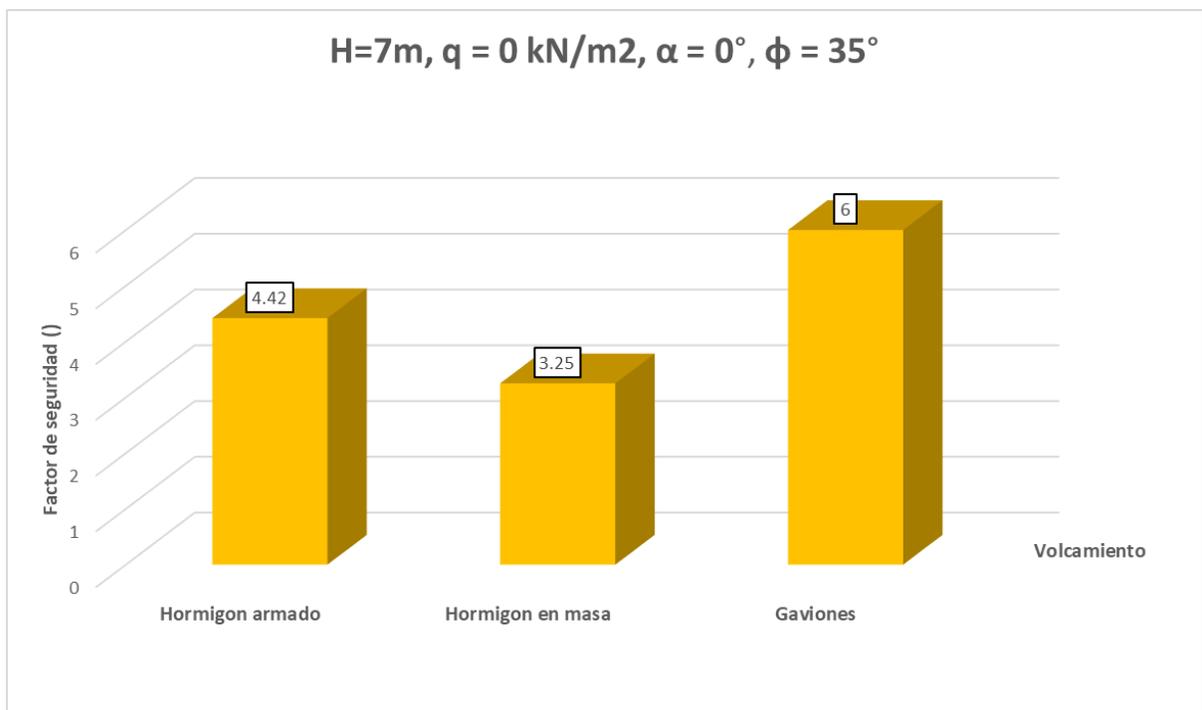
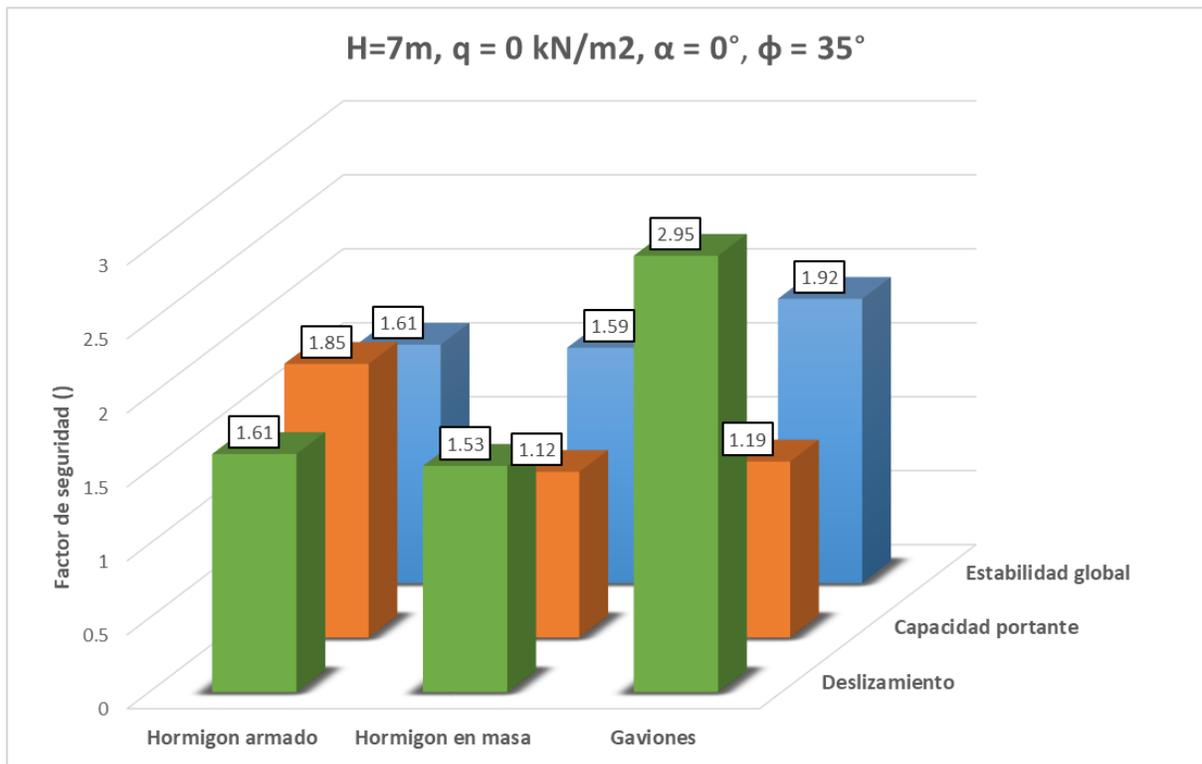
Moneda: Bolivianos

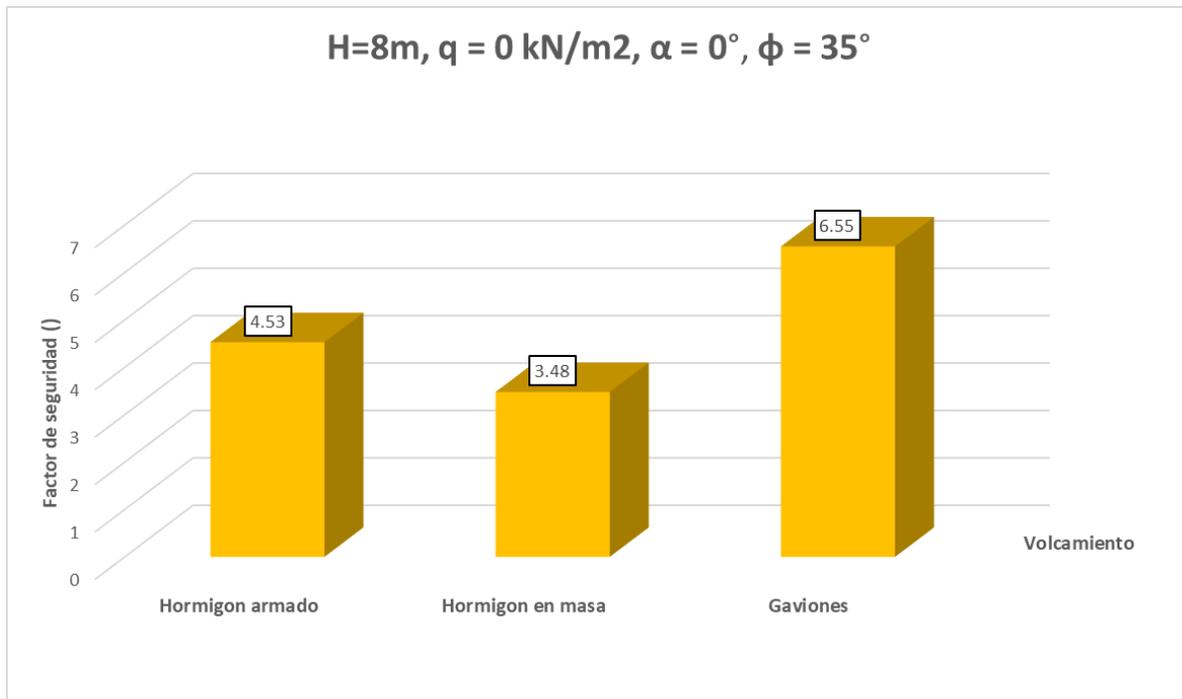
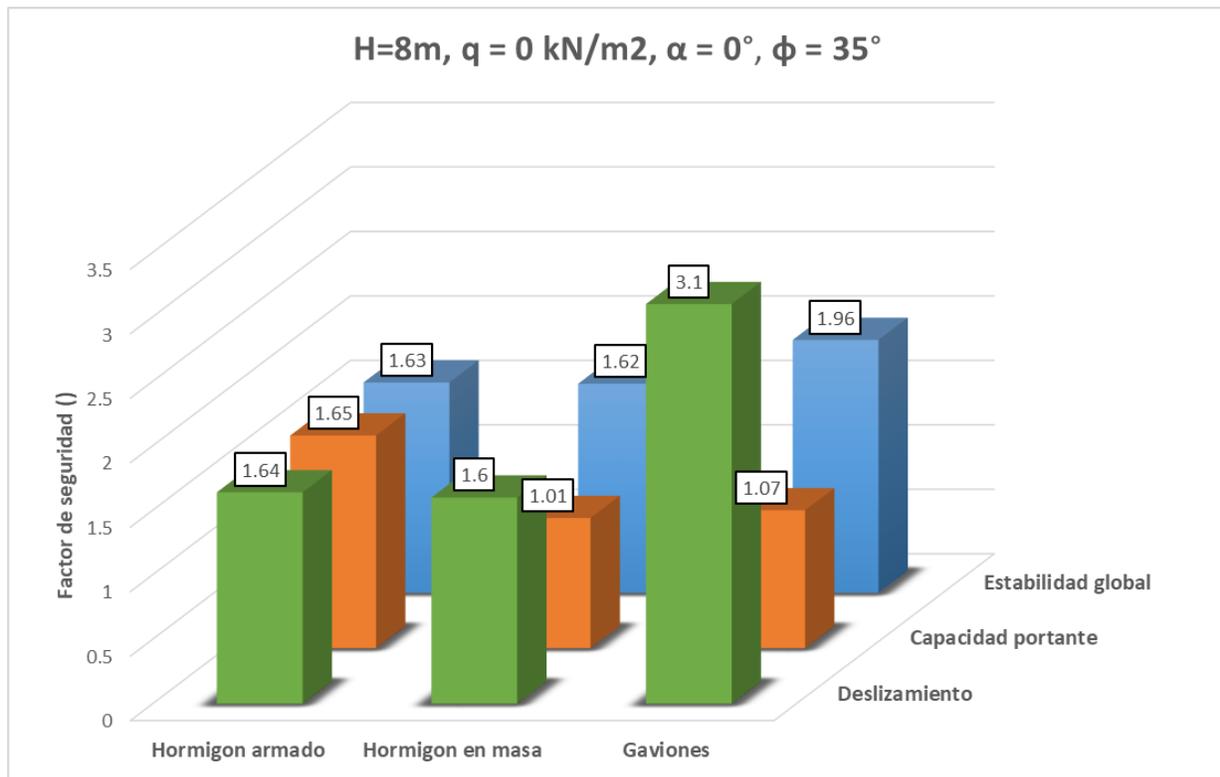
DESCRIPCIÓN	UND.	CANTIDAD	PRECIO UNITARIO	COSTO PARCIAL	COSTO TOTAL
GAVION (H=5m)					
EXCAVACION CON RETROEXCAVADORA	M3	21.90	37.48	820.84	
MURO DE CONTENCIÓN DE GAVION	M3	10.00	701.06	7,010.61	
RELLENO Y COMPACTADO	M3	11.93	283.70	3,383.41	
TOTAL					11,214.87
GAVION (H=6m)					
EXCAVACION CON RETROEXCAVADORA	M3	34.13	37.48	1,279.37	
MURO DE CONTENCIÓN DE GAVION	M3	15.00	701.06	10,515.92	
RELLENO Y COMPACTADO	M3	19.16	283.70	5,435.52	
TOTAL					17,230.81
GAVION (H=7m)					
EXCAVACION CON RETROEXCAVADORA	M3	49.00	37.48	1,836.57	
MURO DE CONTENCIÓN DE GAVION	M3	19.00	701.06	13,320.16	
RELLENO Y COMPACTADO	M3	30.02	283.70	8,518.13	
TOTAL					23,674.85
GAVION (H=8m)					
EXCAVACION CON RETROEXCAVADORA	M3	66.50	37.48	2,492.42	
MURO DE CONTENCIÓN DE GAVION	M3	26.00	701.06	18,227.59	
RELLENO Y COMPACTADO	M3	40.52	283.70	11,496.38	
TOTAL					32,216.39
GAVION (H=9m)					
EXCAVACION CON RETROEXCAVADORA	M3	96.22	37.48	3,606.65	
MURO DE CONTENCIÓN DE GAVION	M3	38.00	701.06	26,640.32	
RELLENO Y COMPACTADO	M3	58.25	283.70	16,525.59	
TOTAL					46,772.55
GAVION (H=10m)					
EXCAVACION CON RETROEXCAVADORA	M3	141.58	37.48	5,306.89	
MURO DE CONTENCIÓN DE GAVION	M3	60.00	701.06	42,063.66	
RELLENO Y COMPACTADO	M3	81.61	283.70	23,153.32	
TOTAL					70,523.86

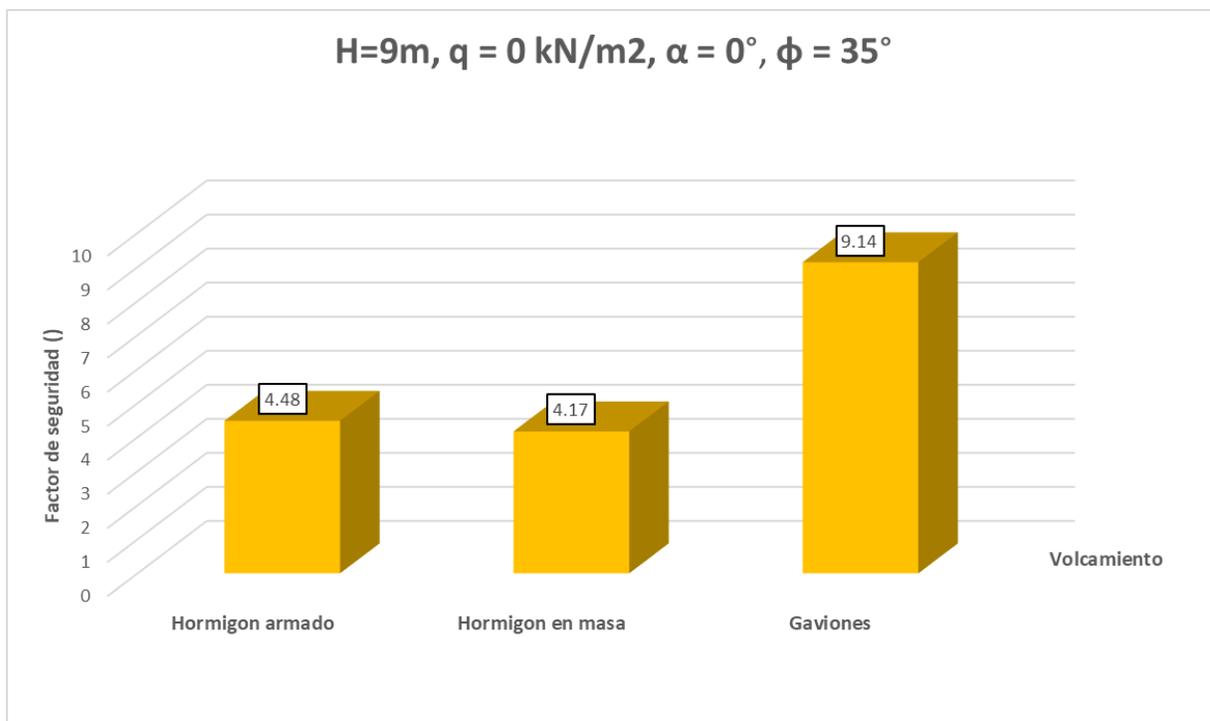
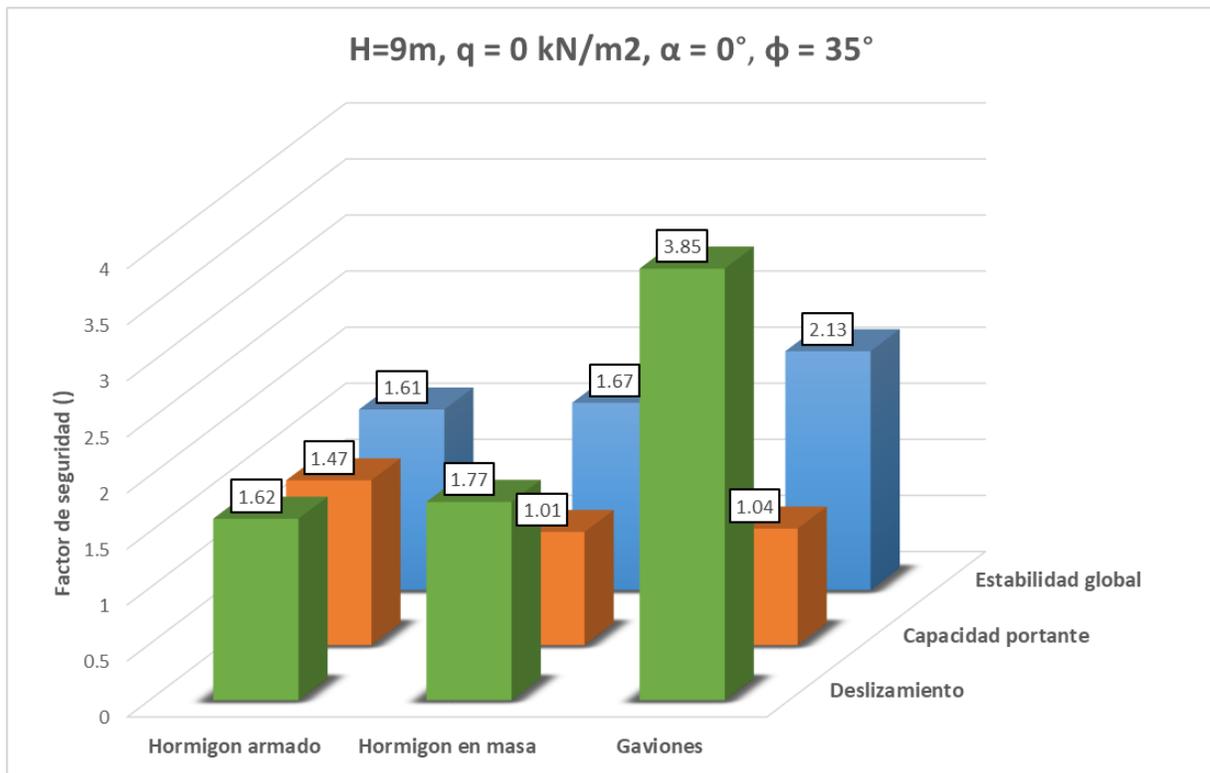
Anexo 9: Gráficos de comparación de los factores de seguridad para los tres tipos de muros por método de Coulumb

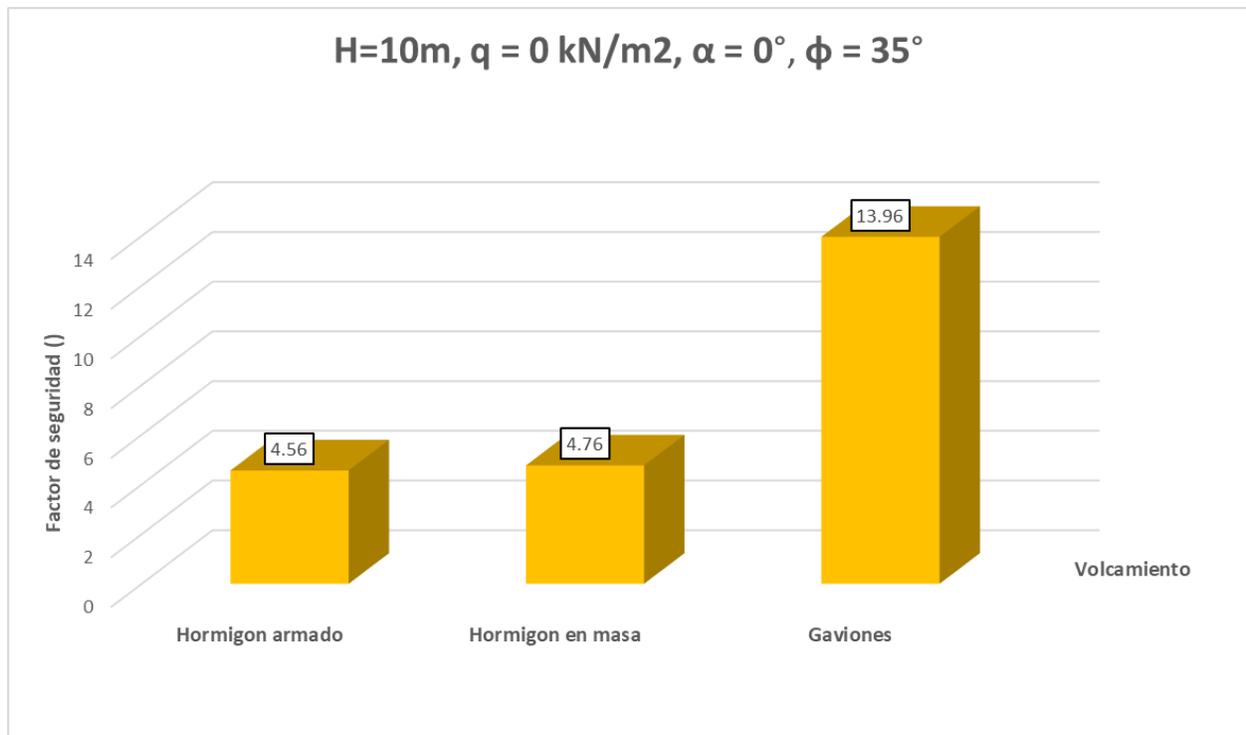
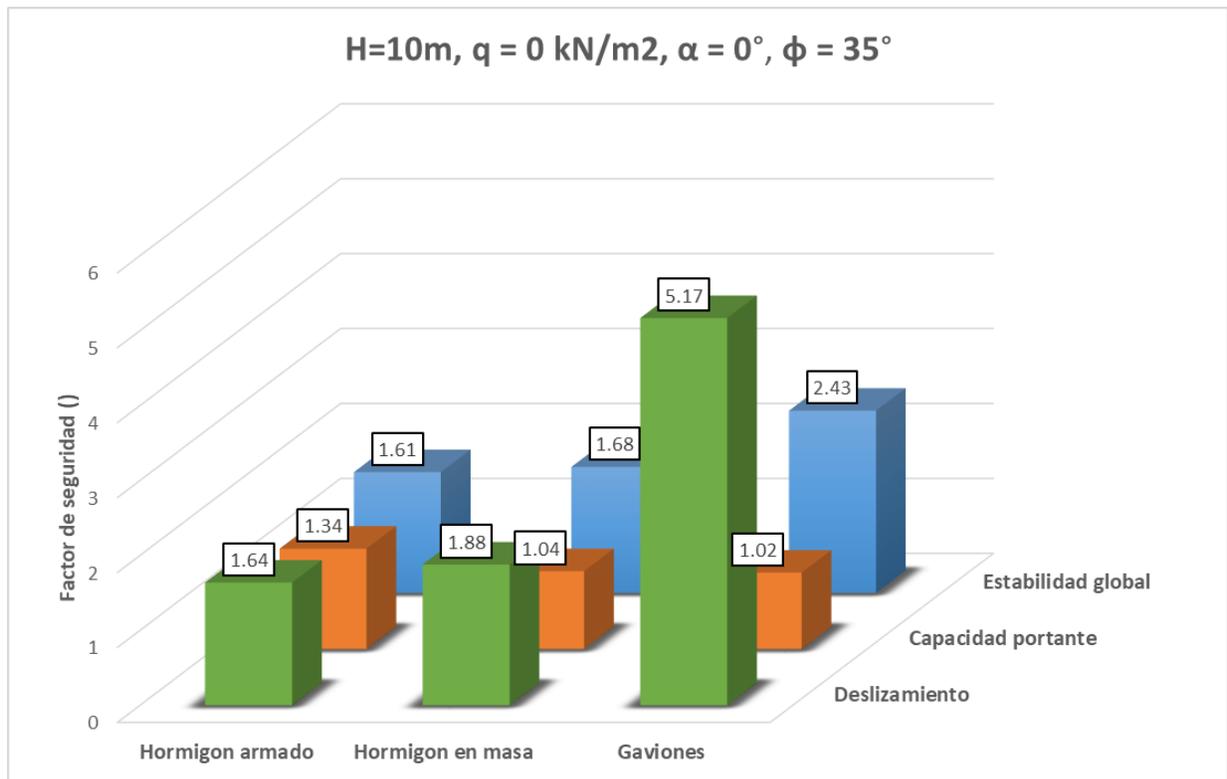


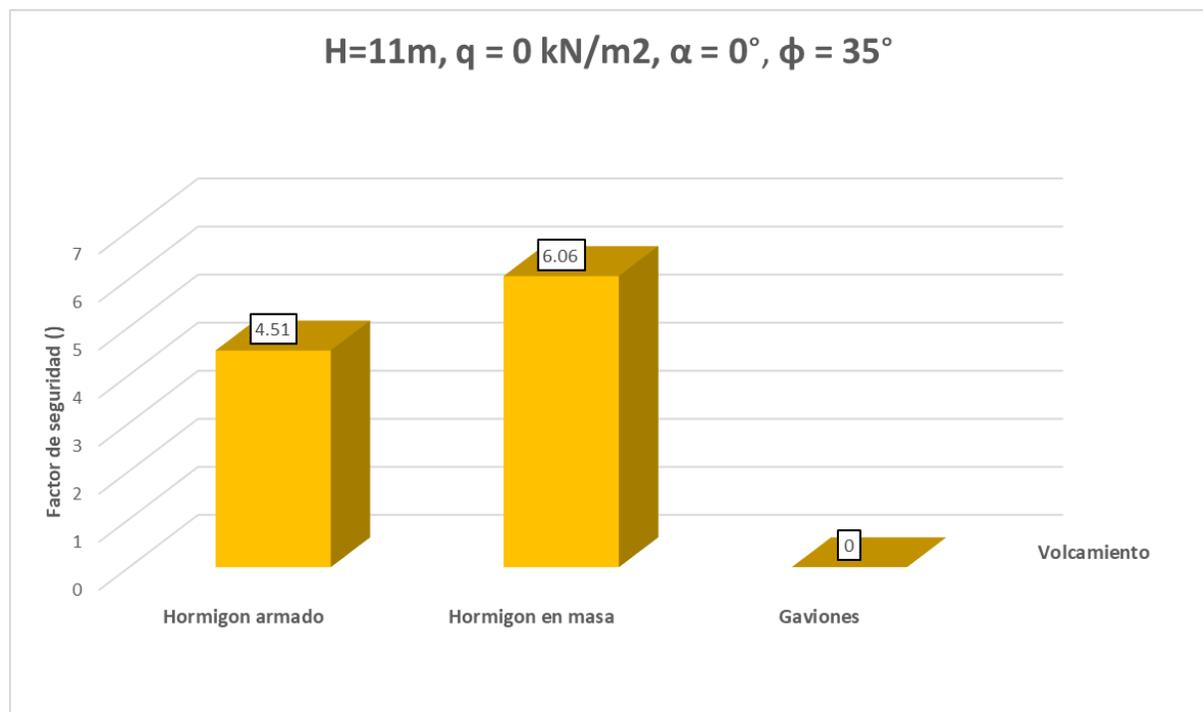
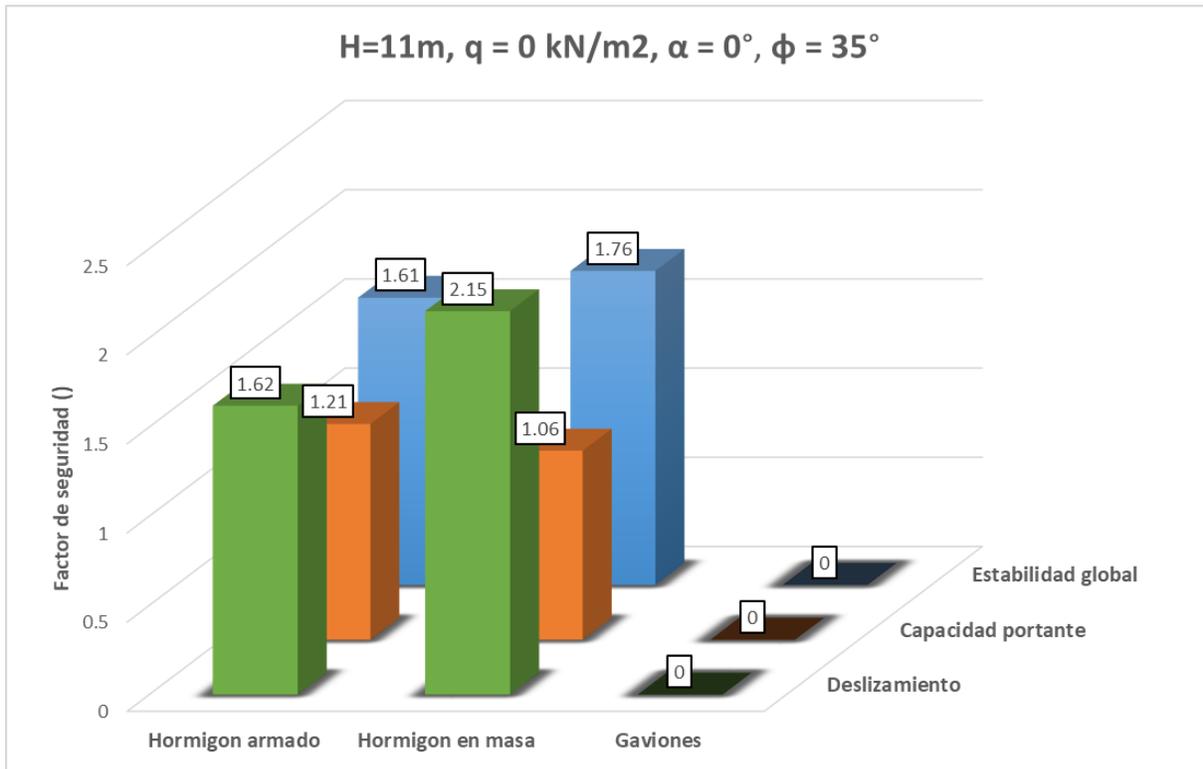


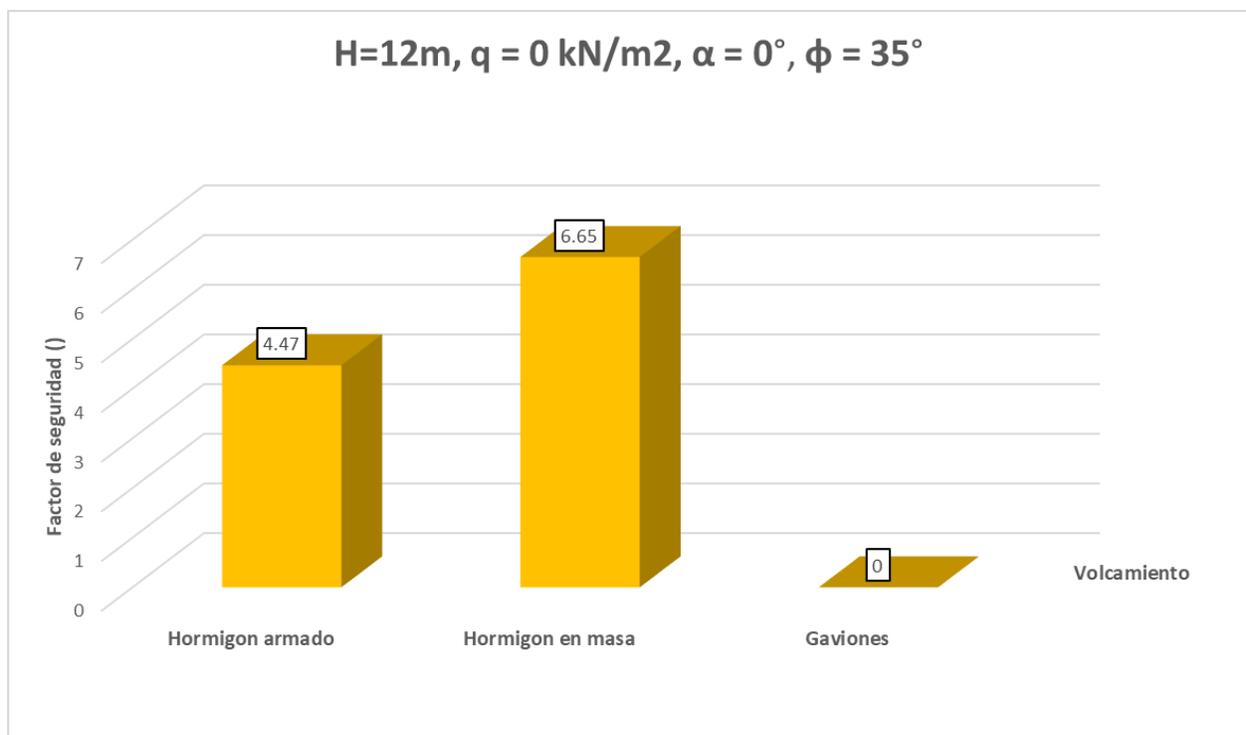
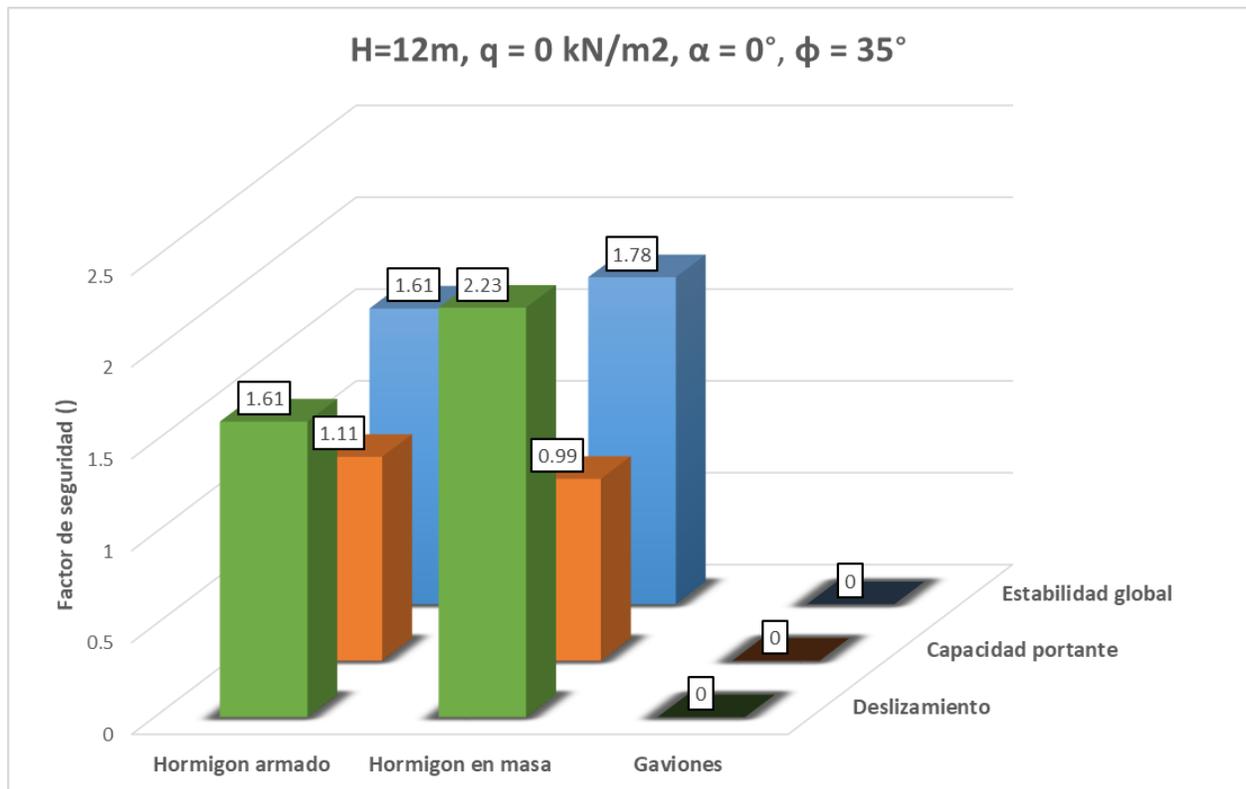


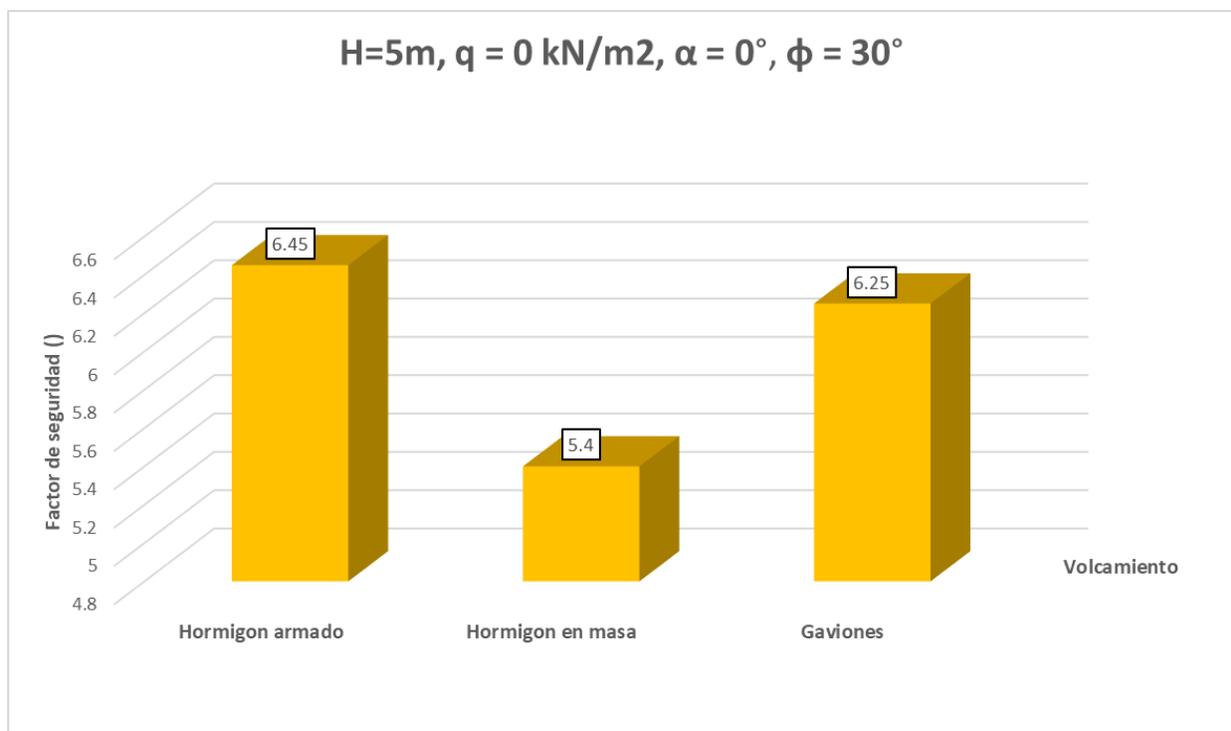
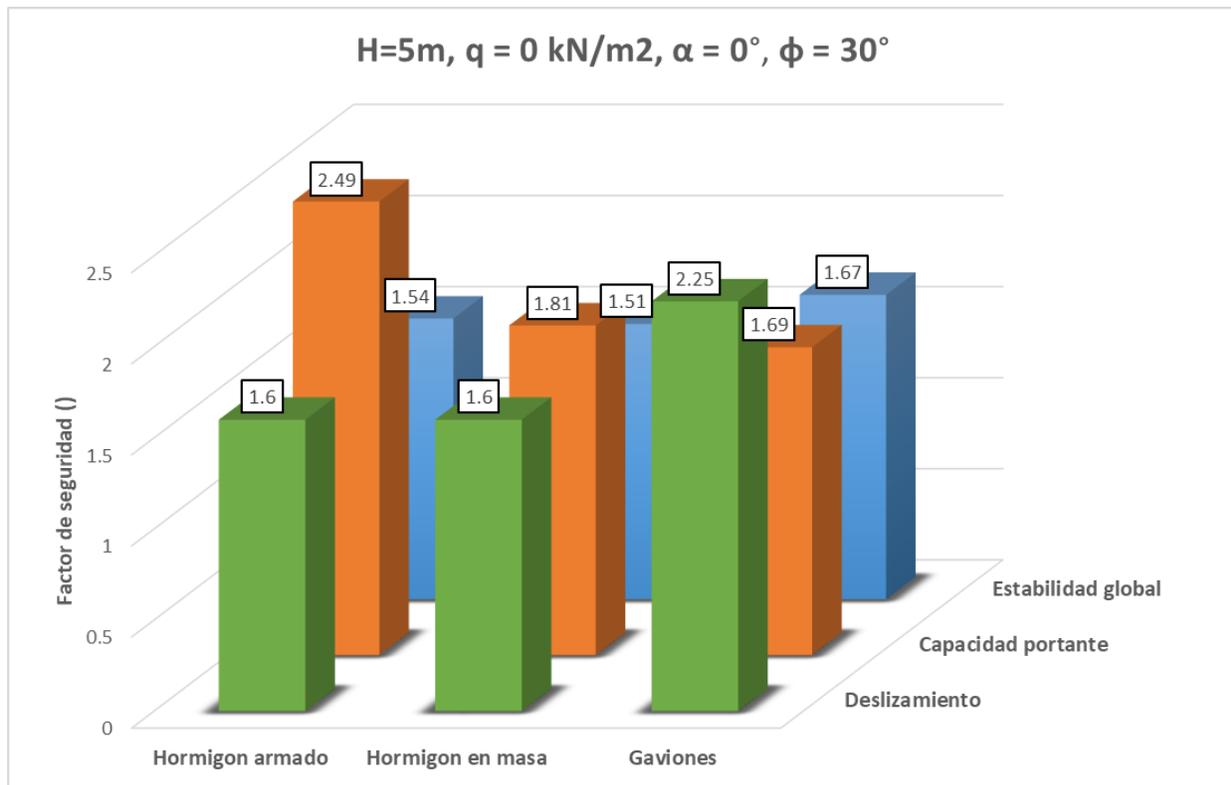


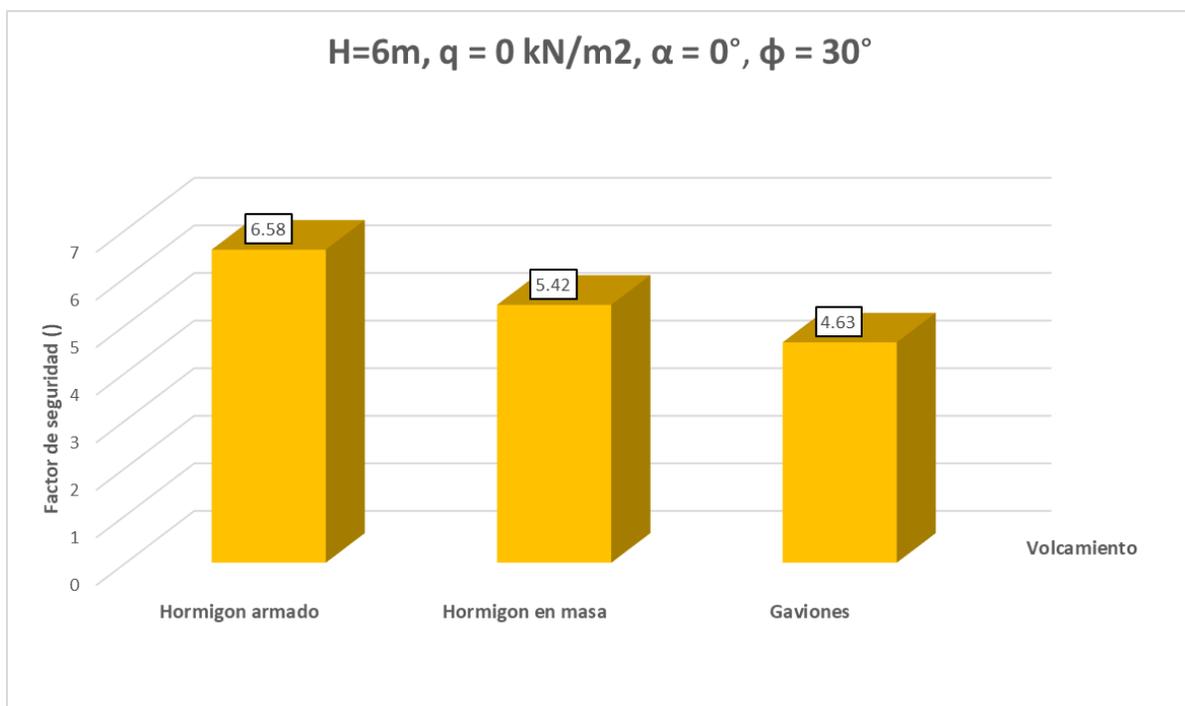
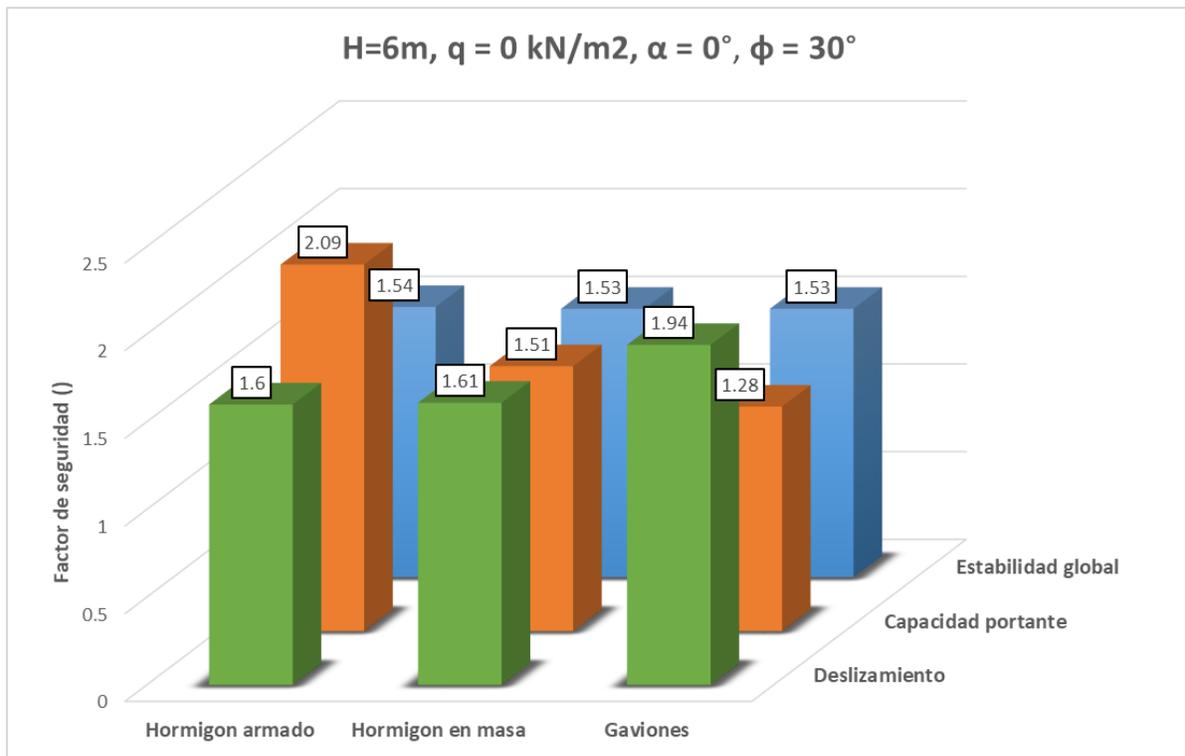


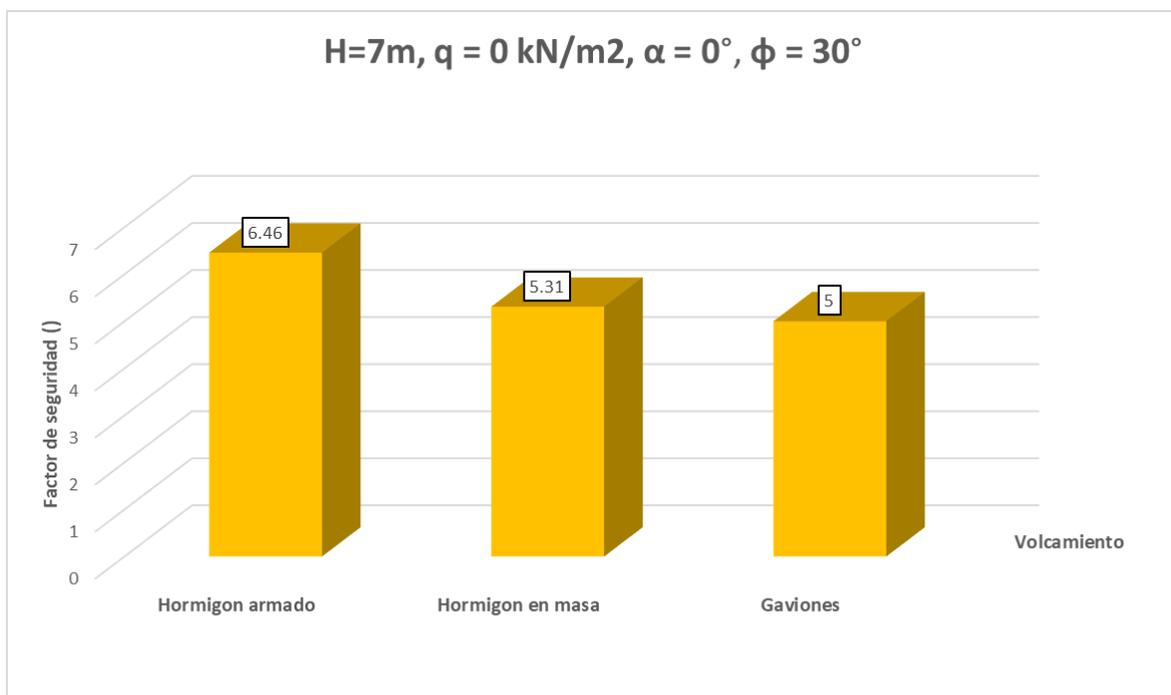
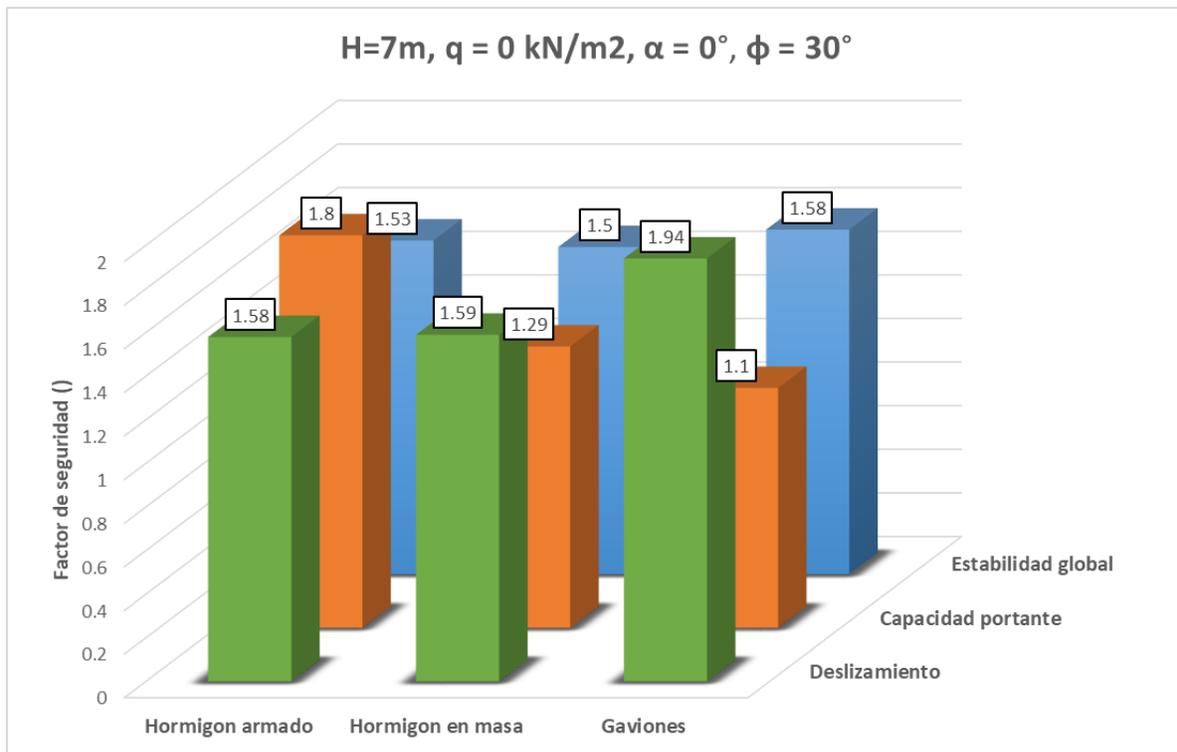


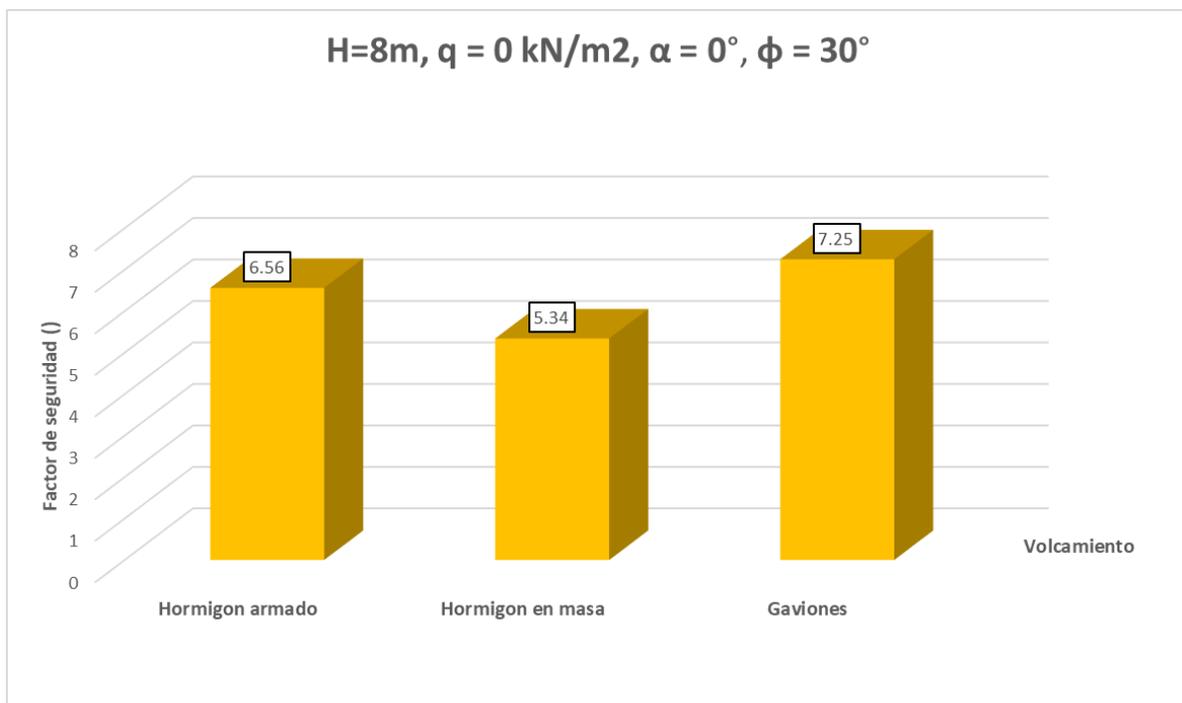
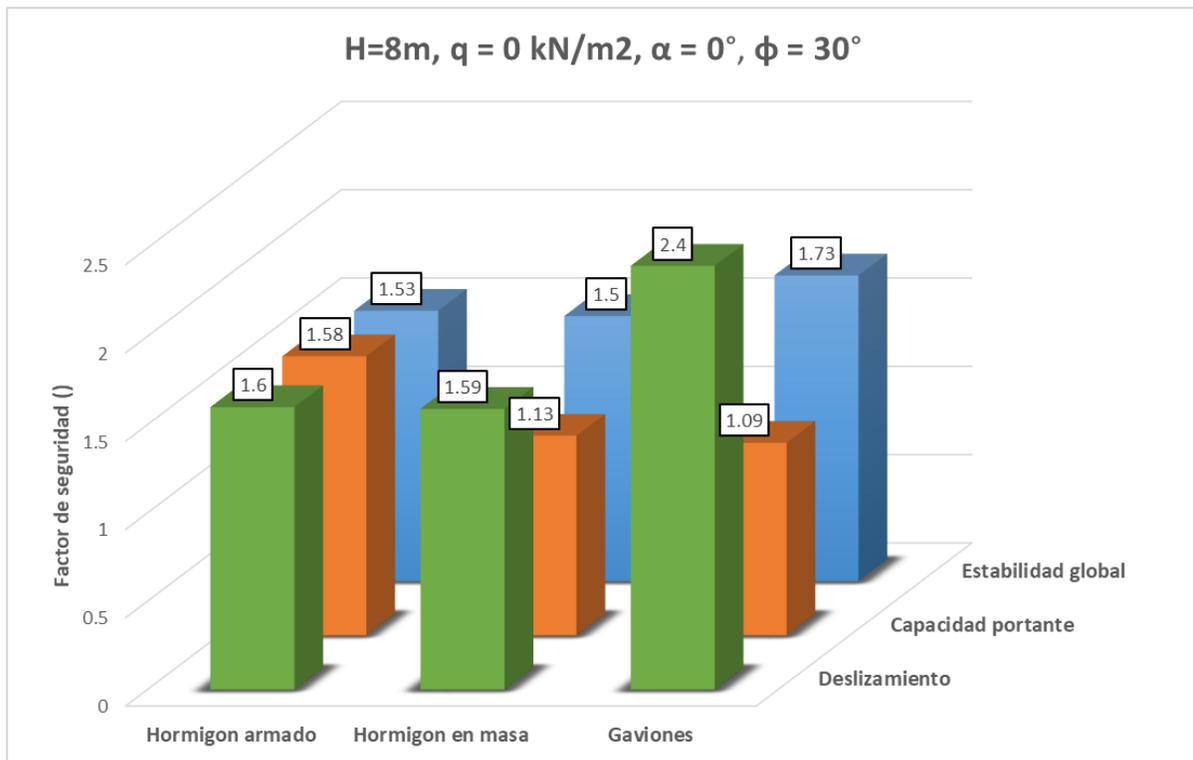


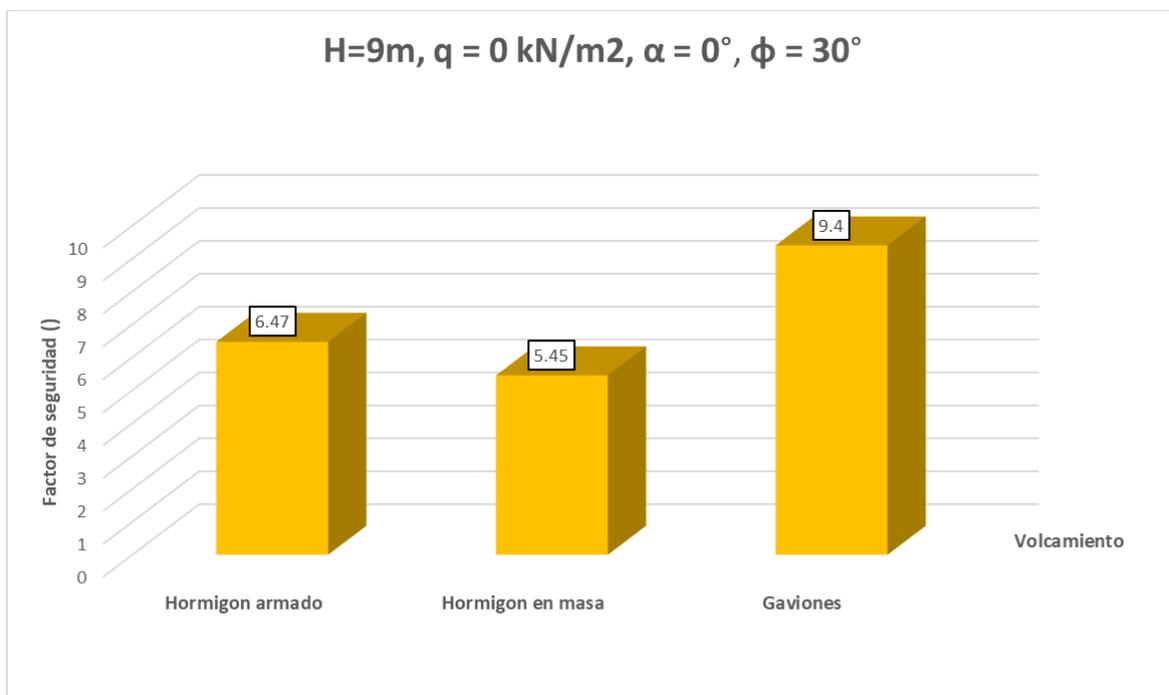
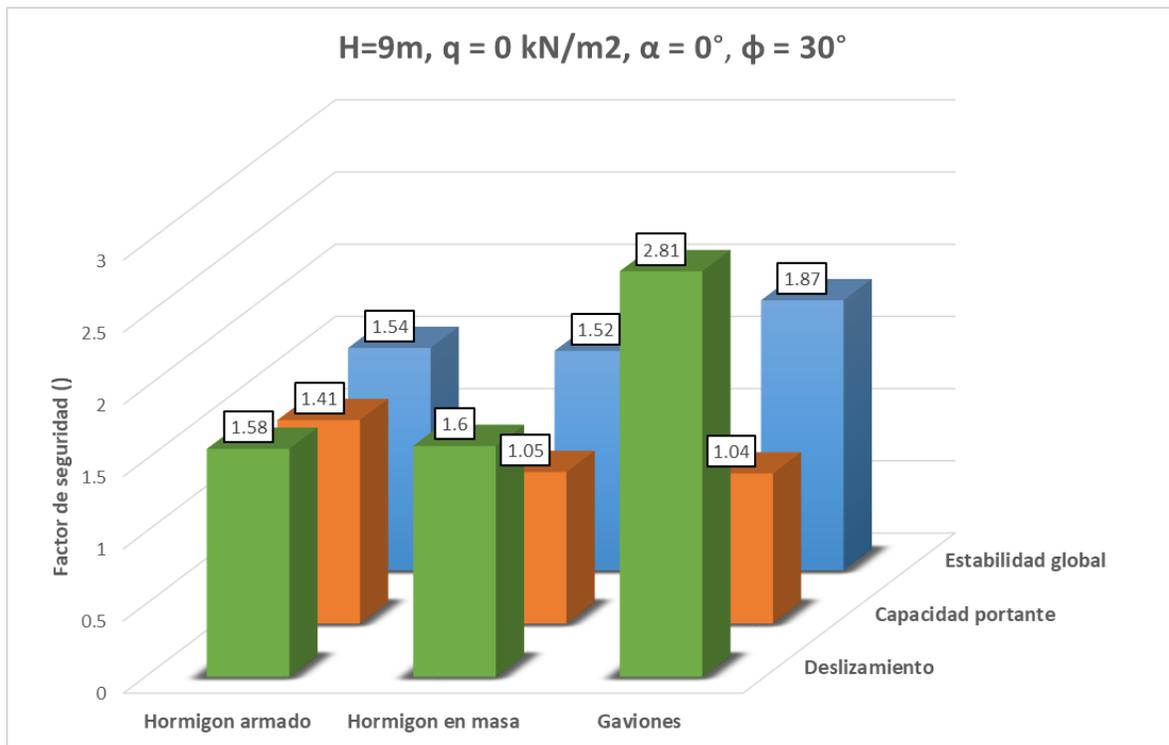


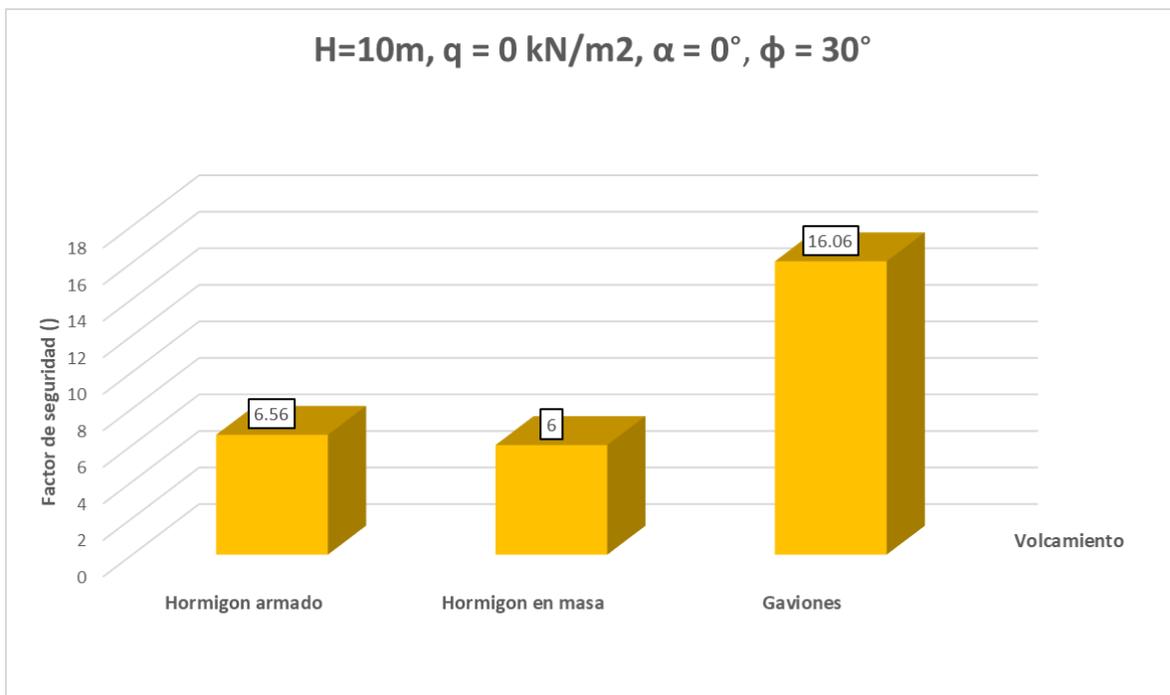
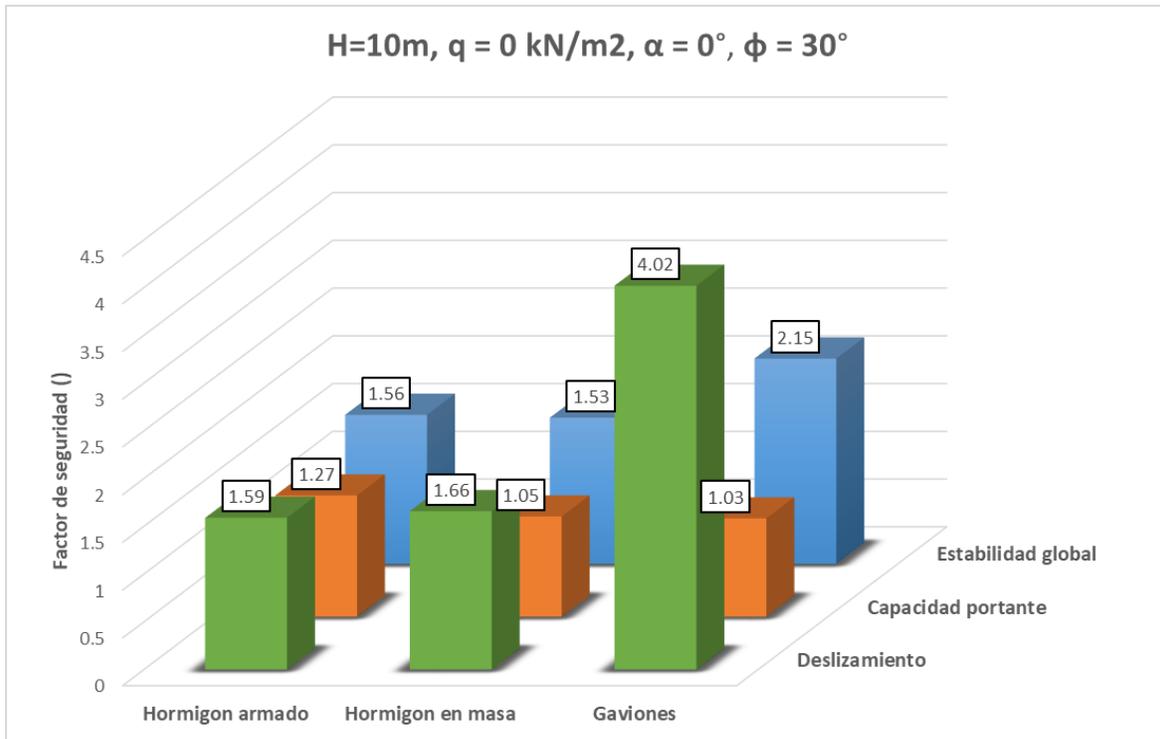


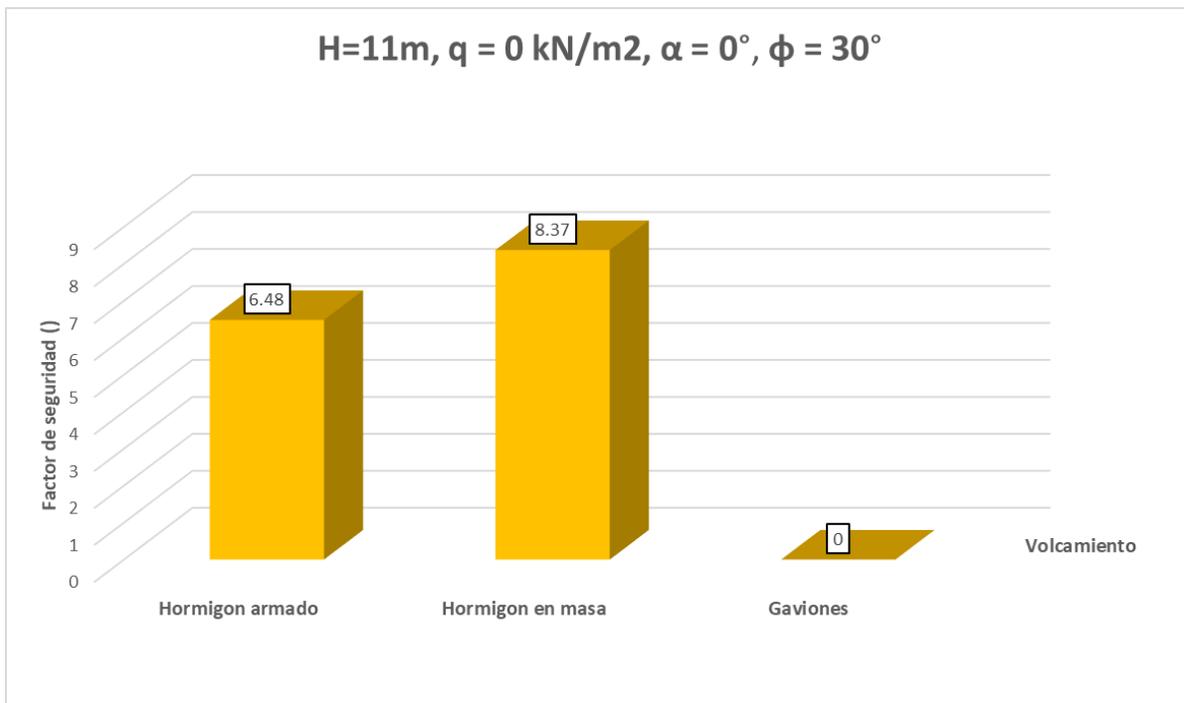
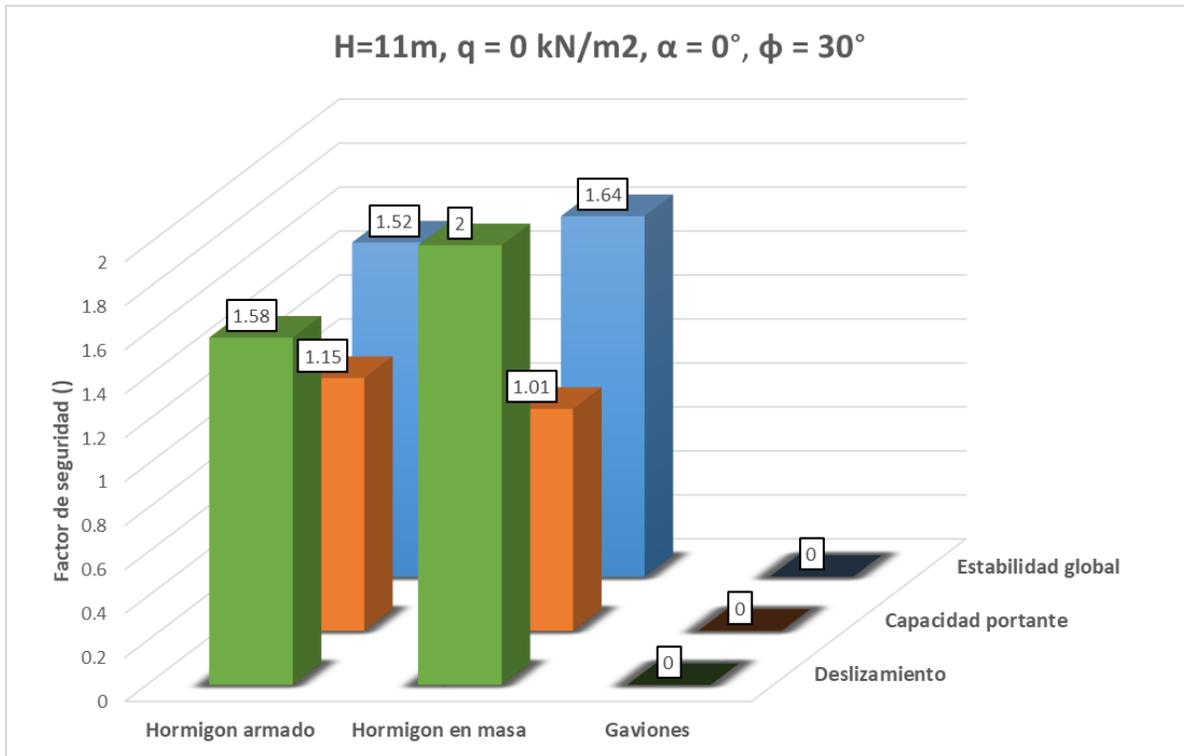


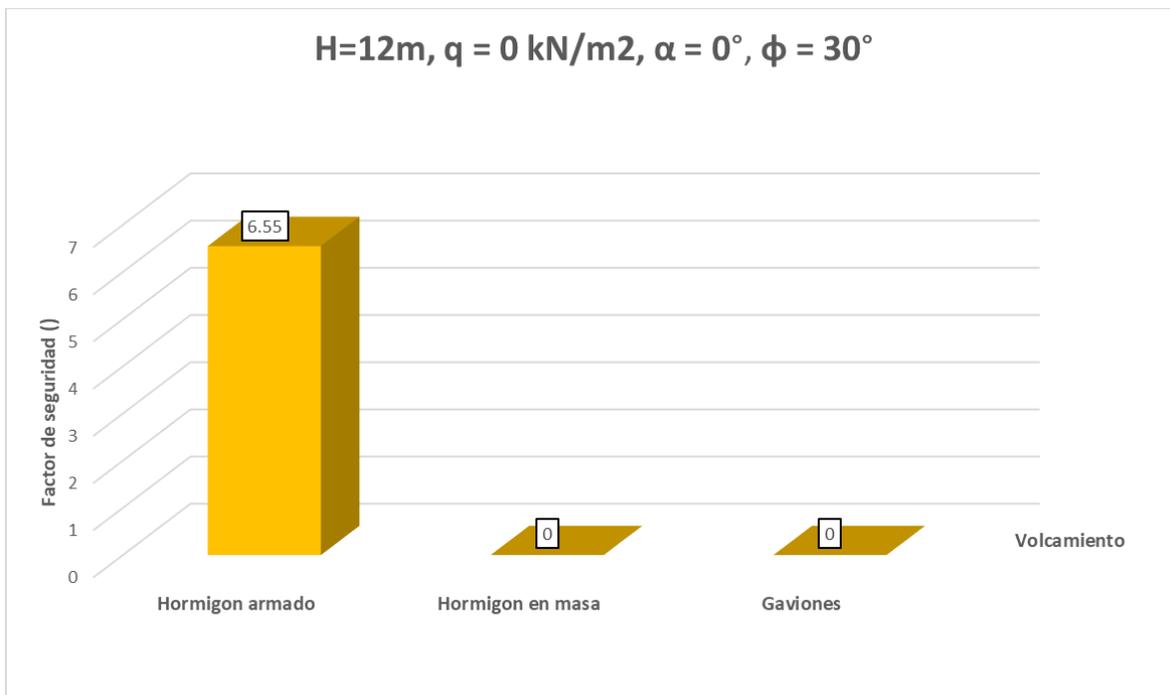
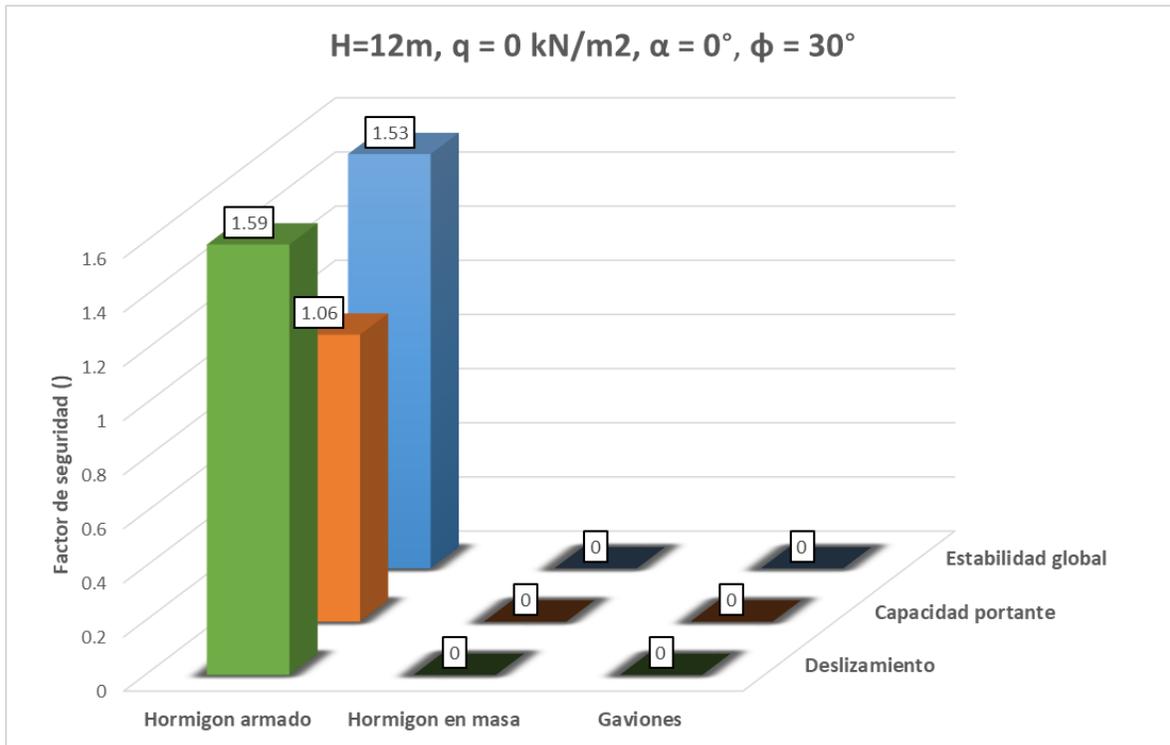


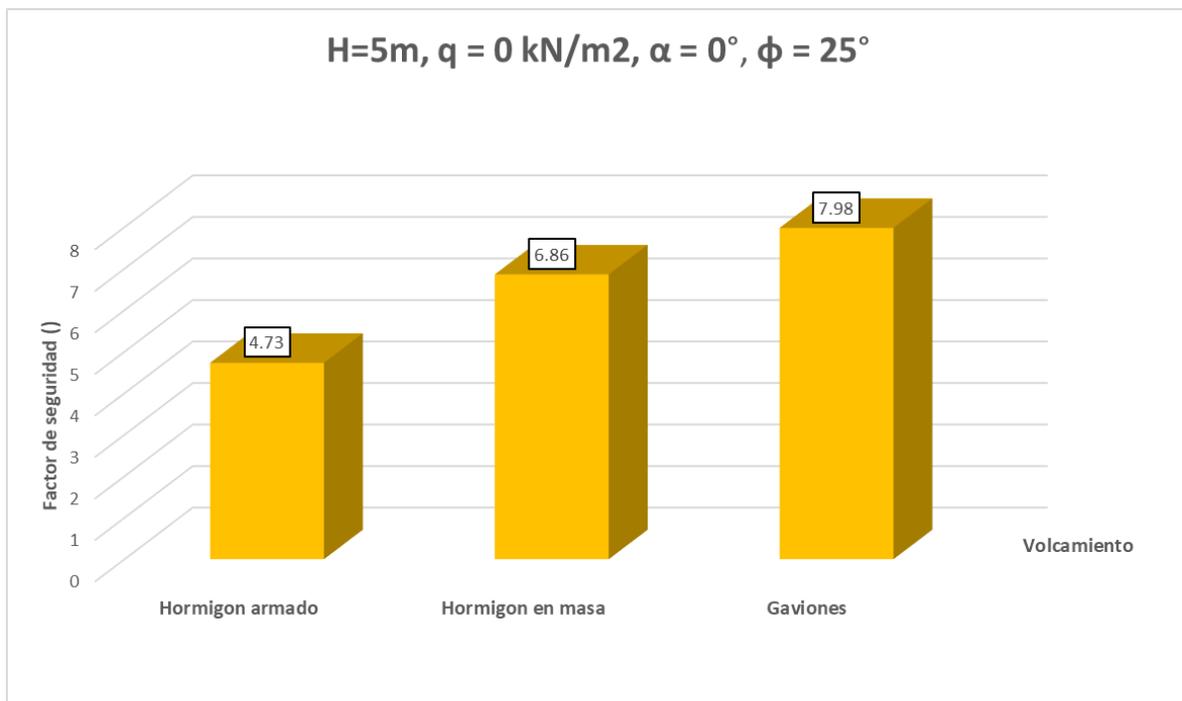
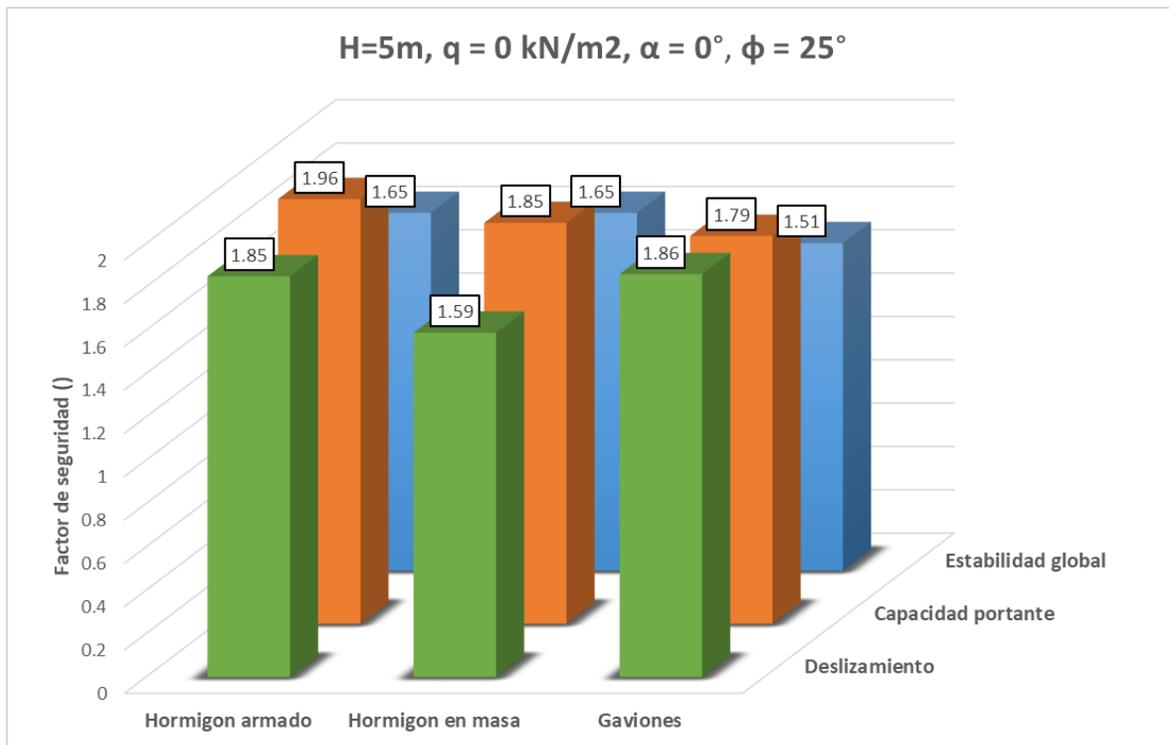


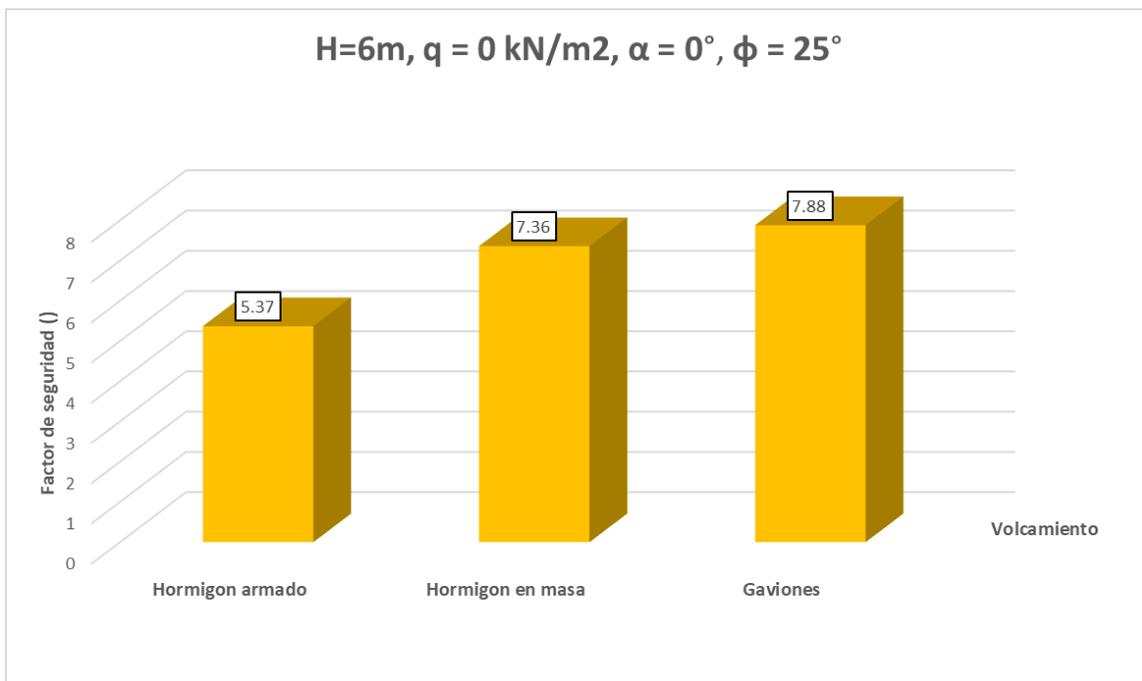
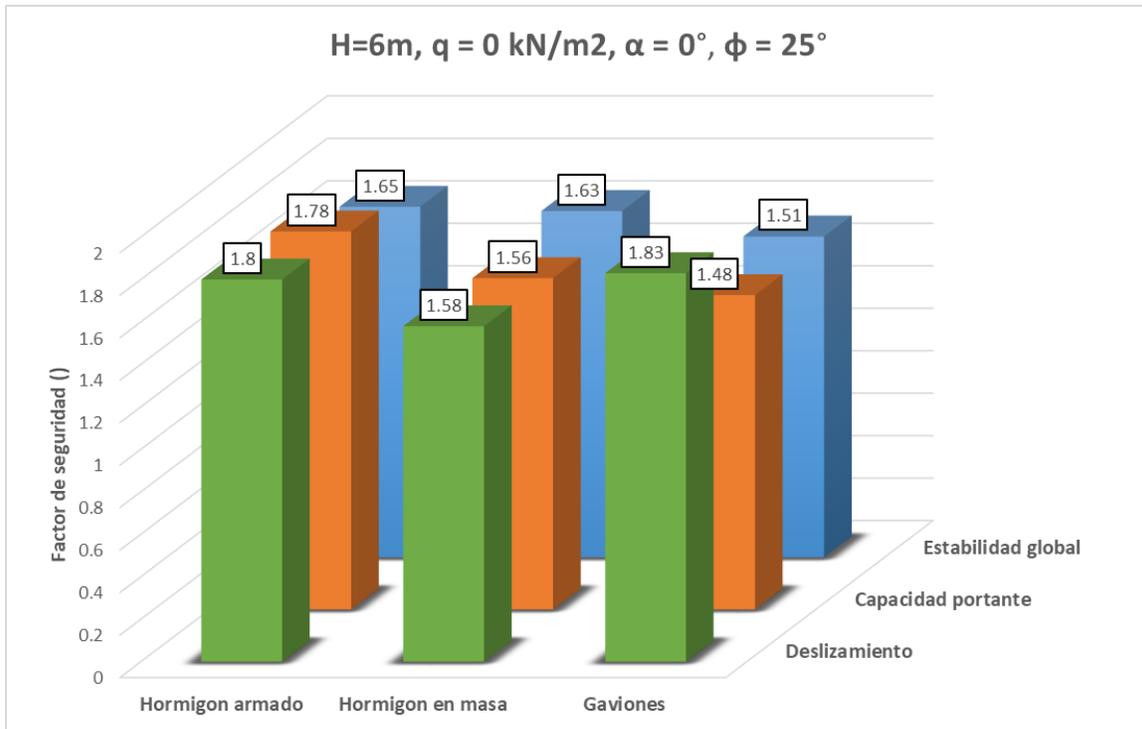


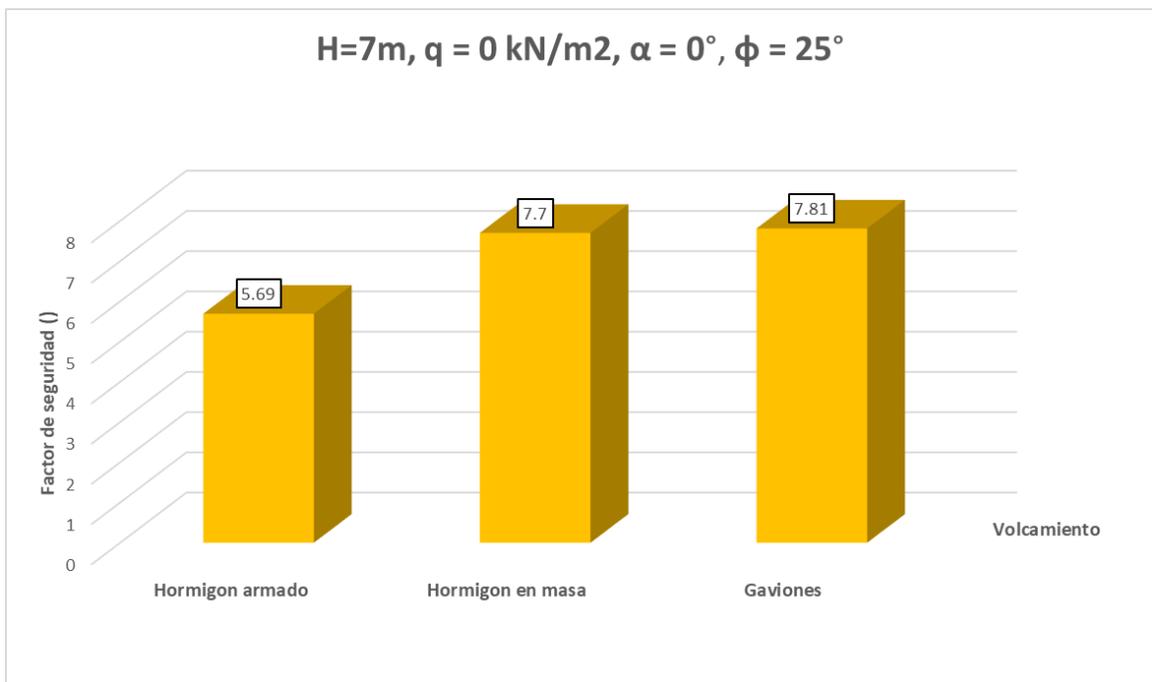
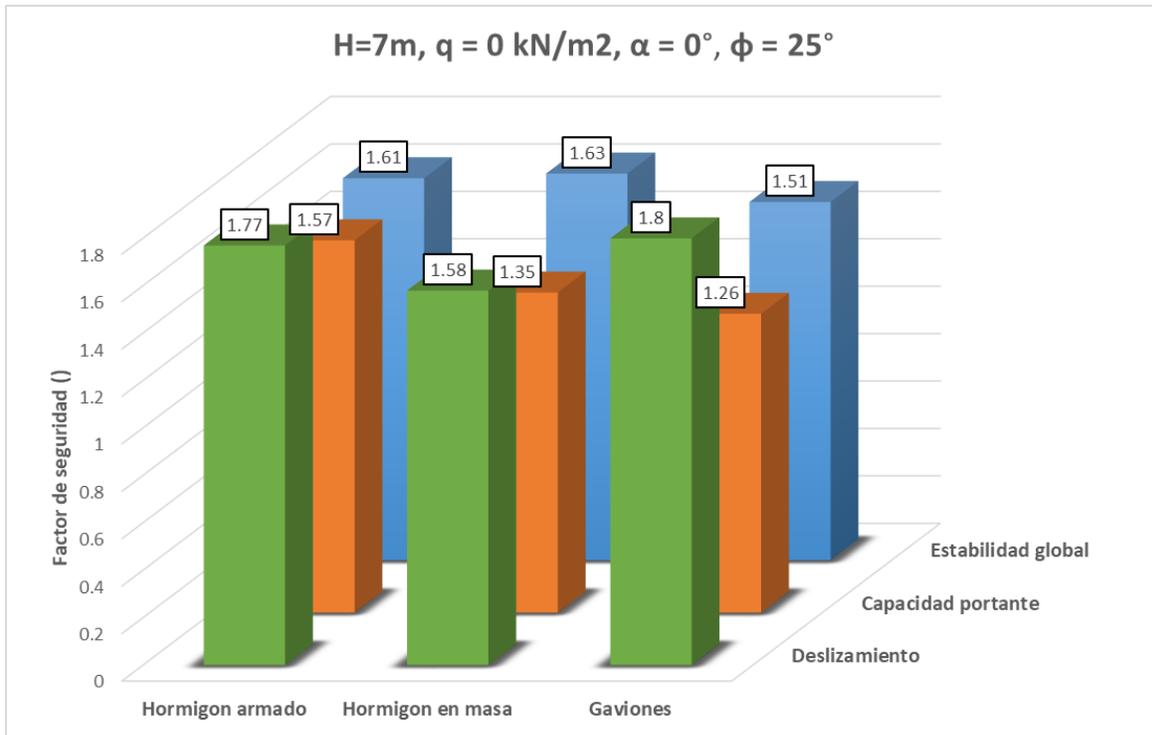


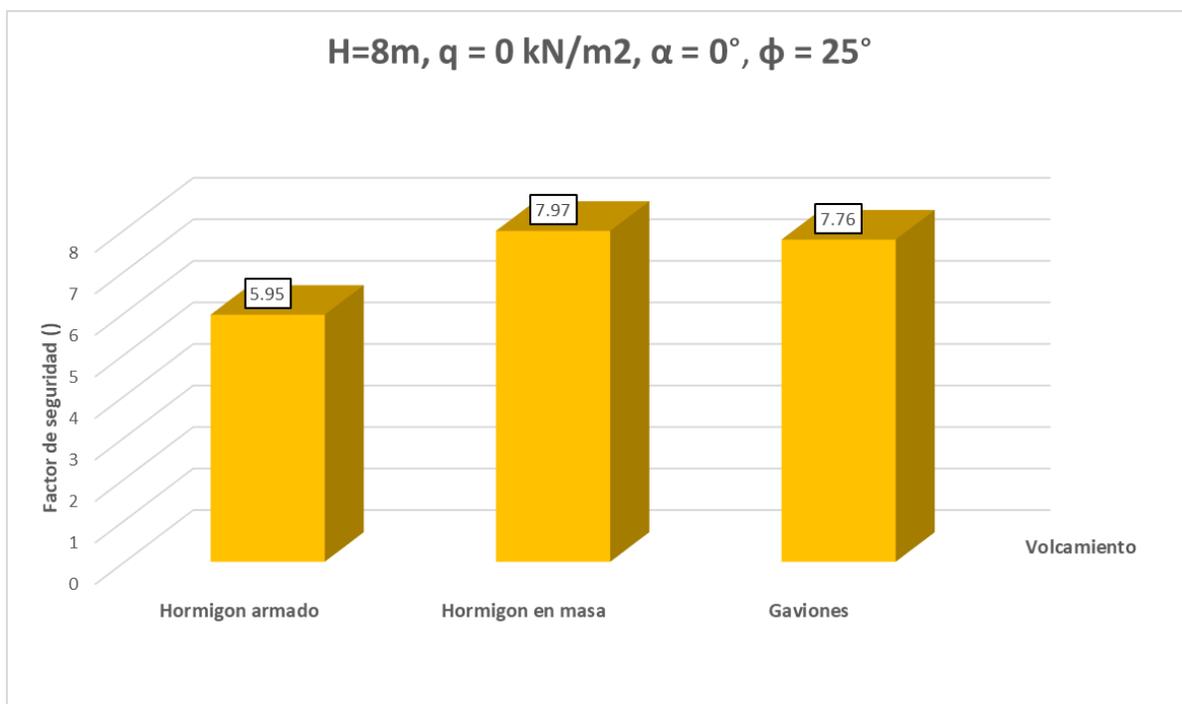
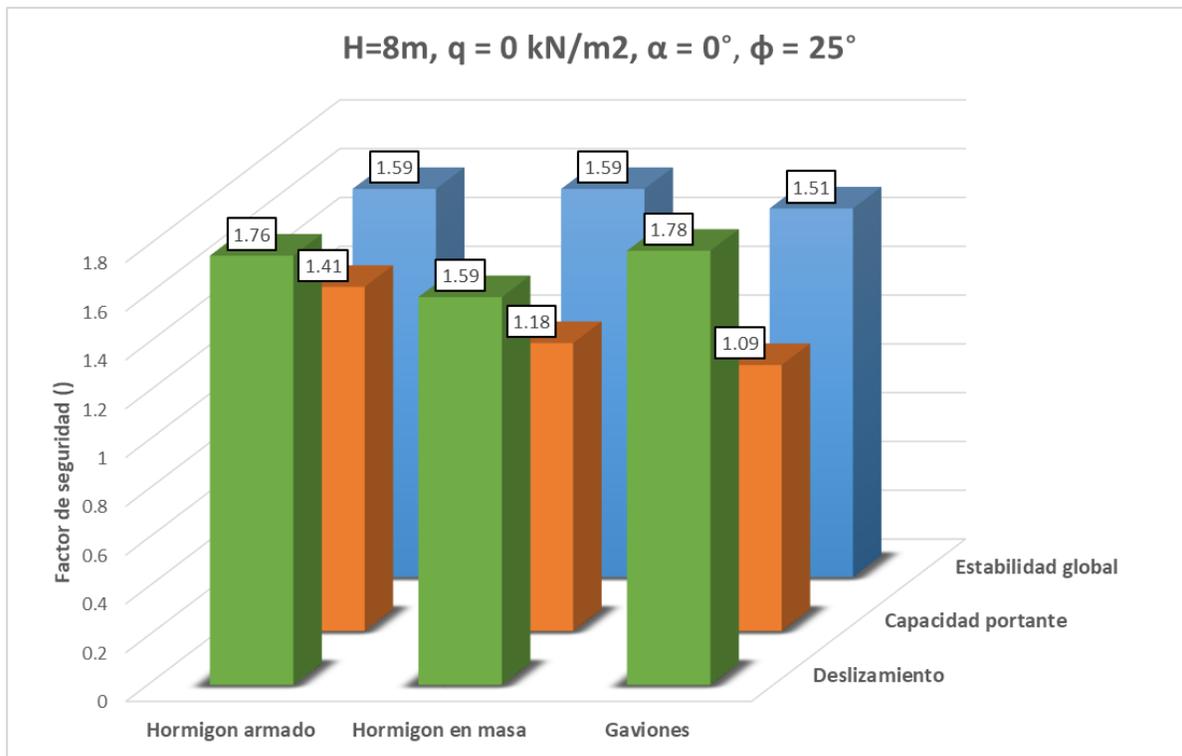


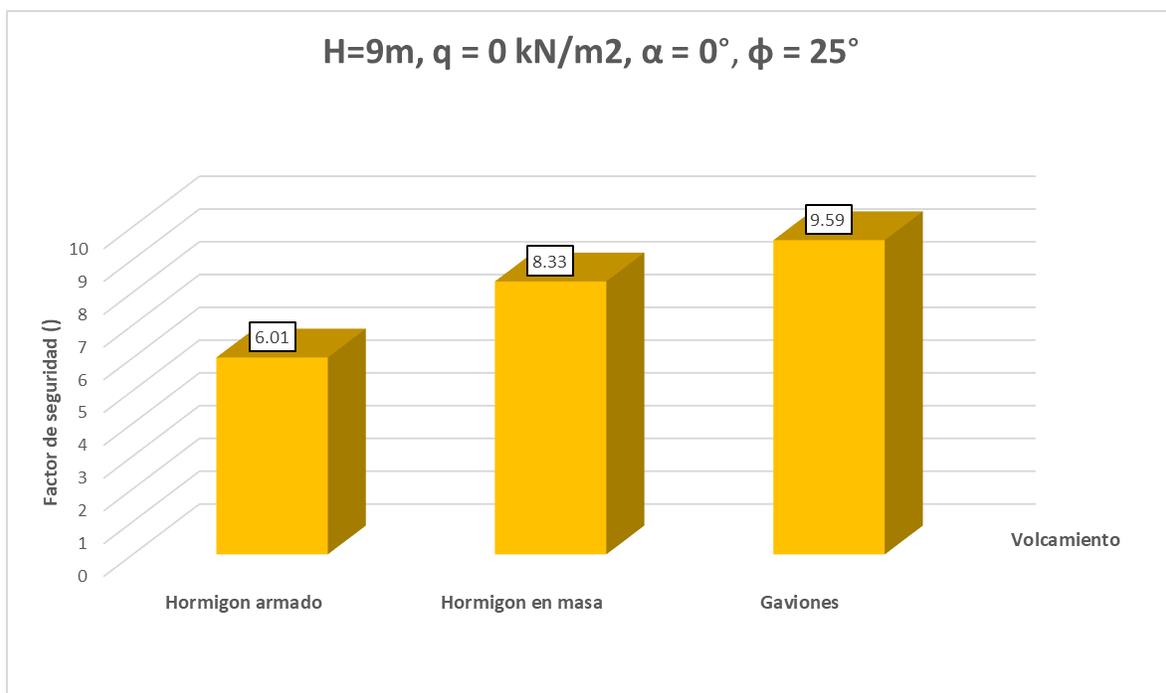
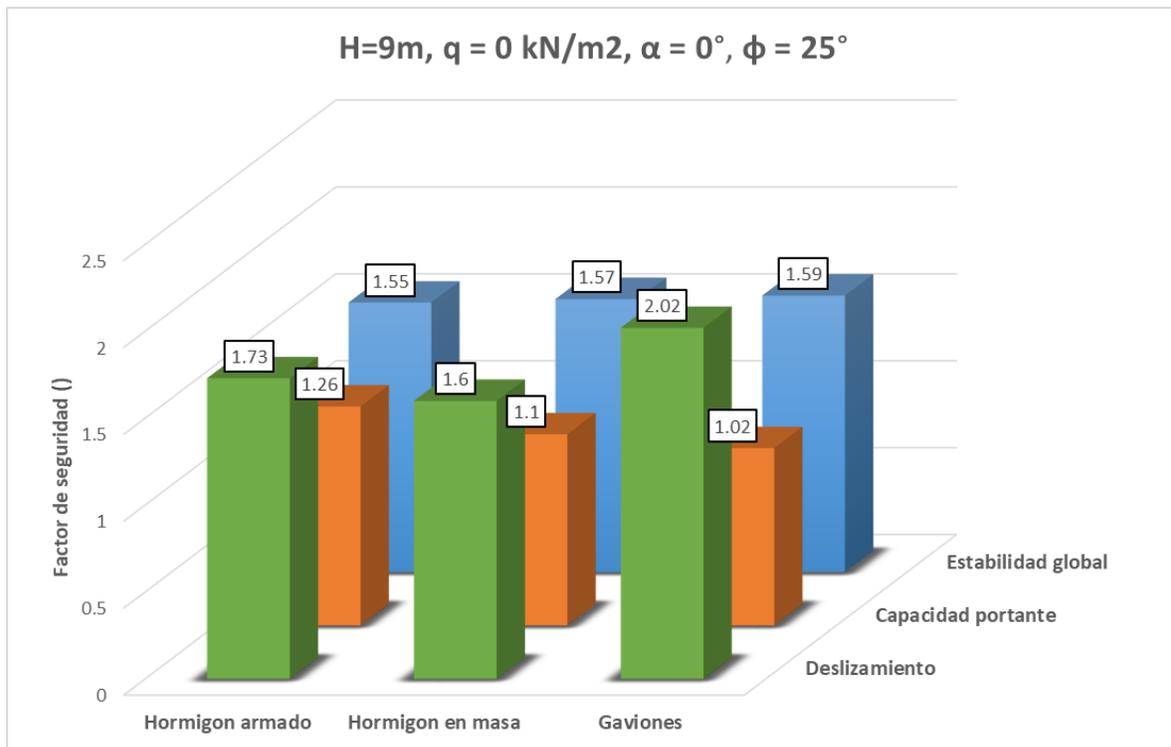


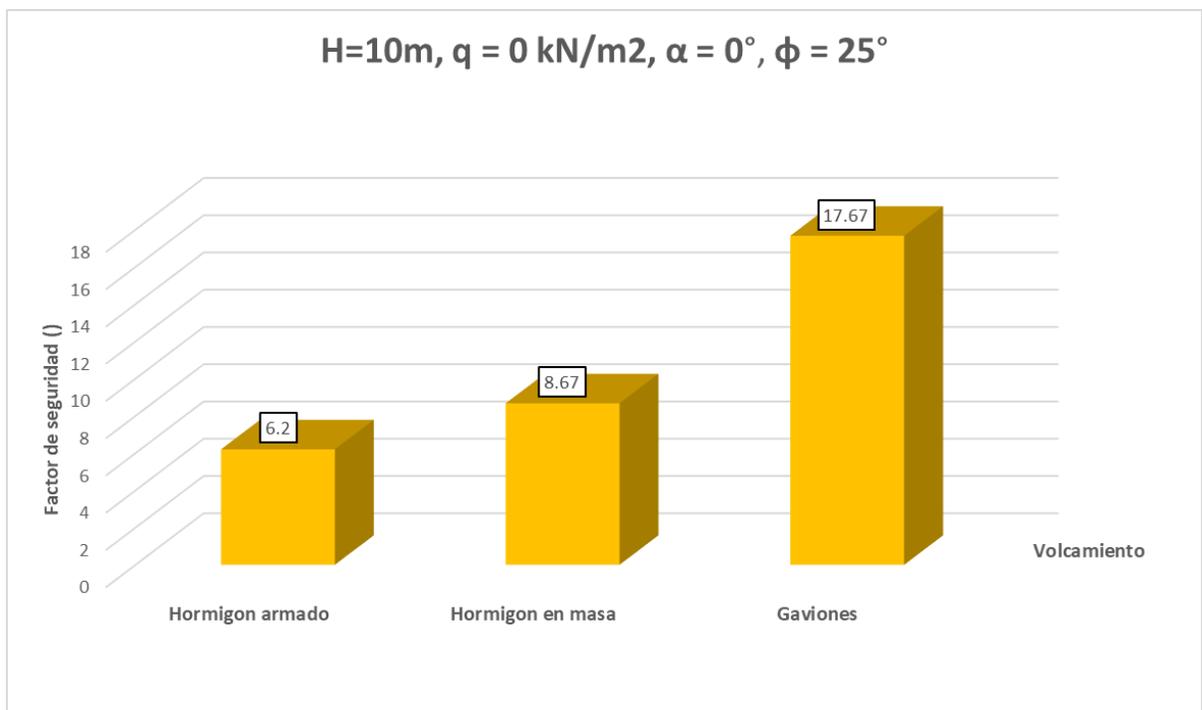
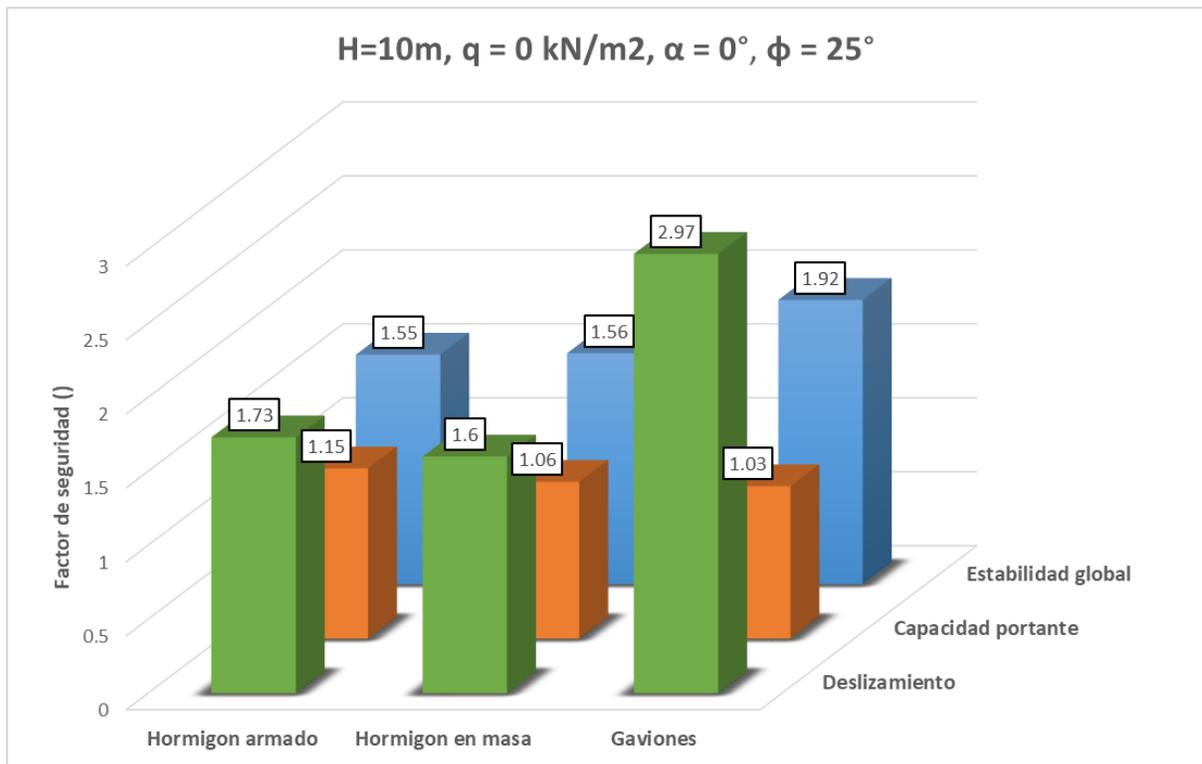


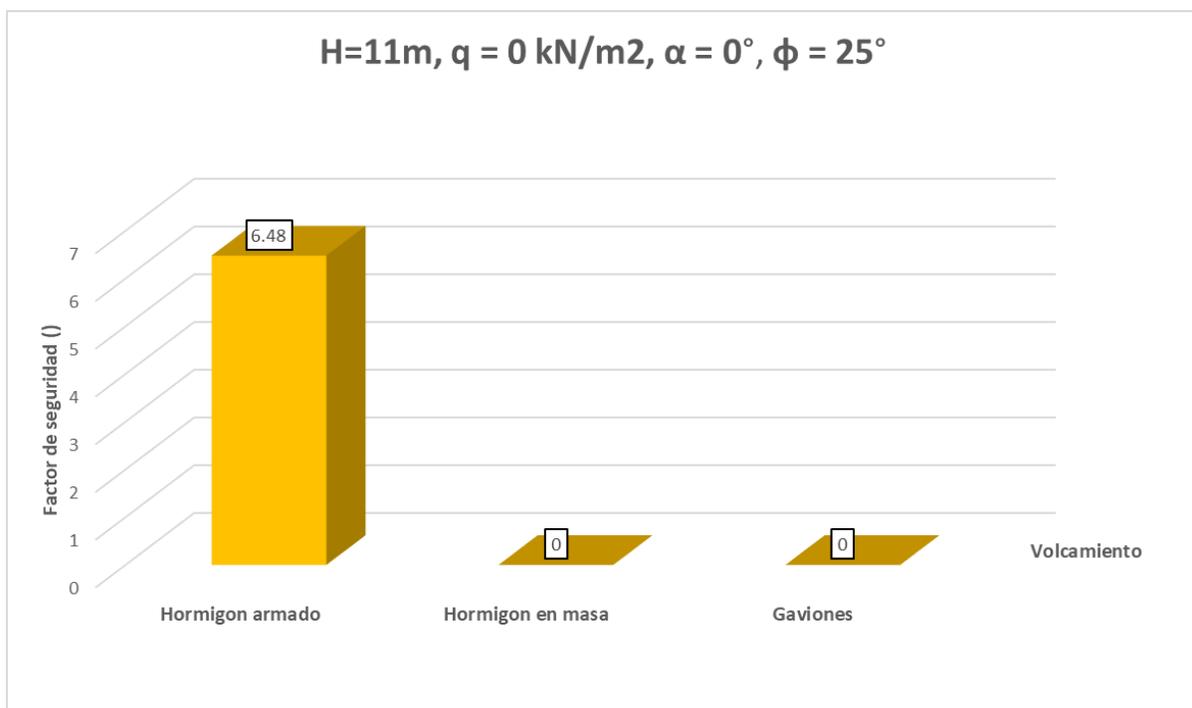
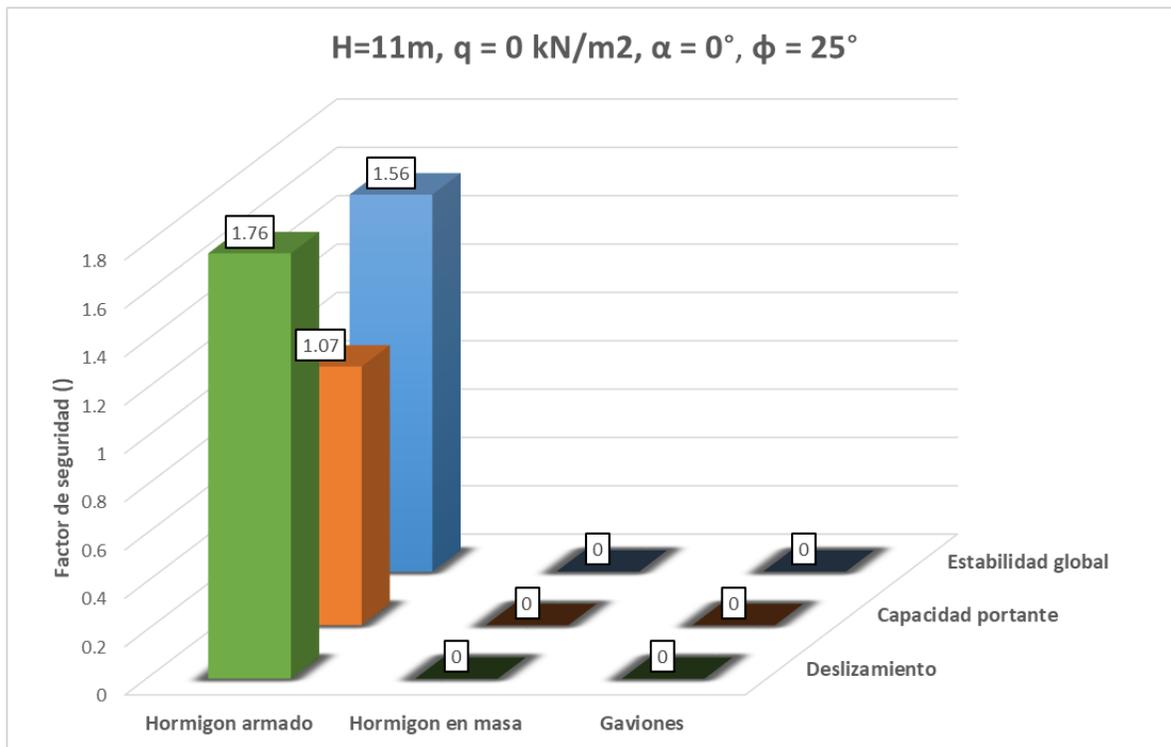


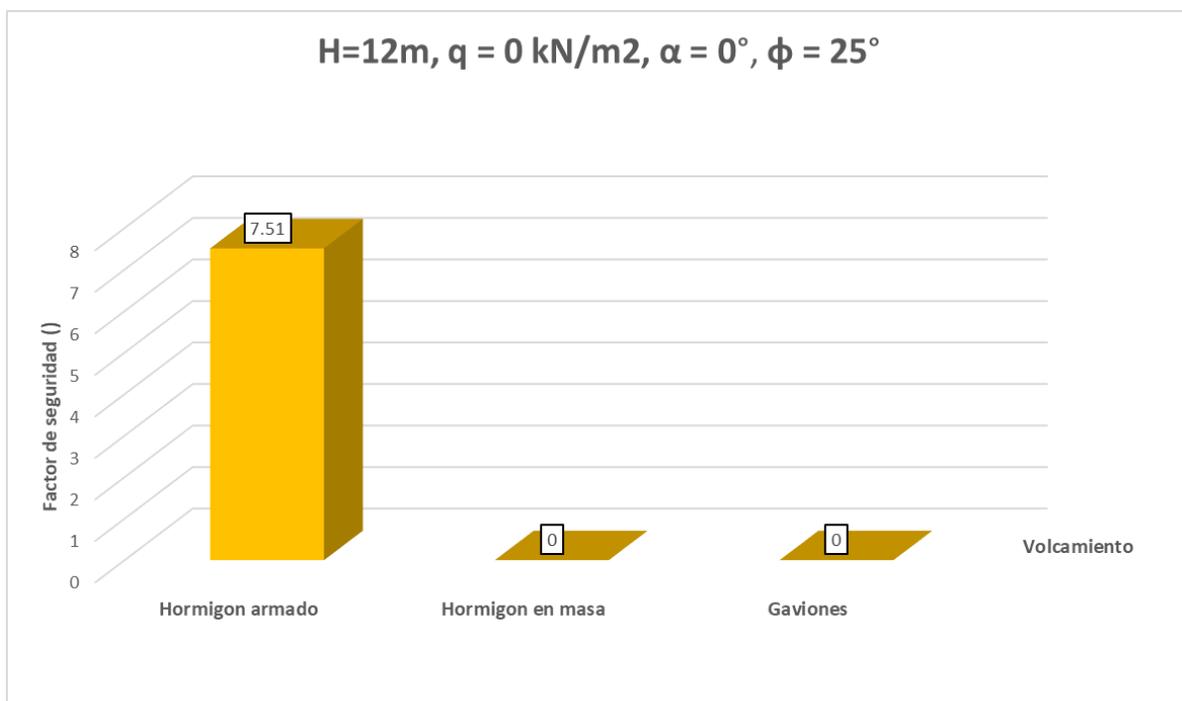
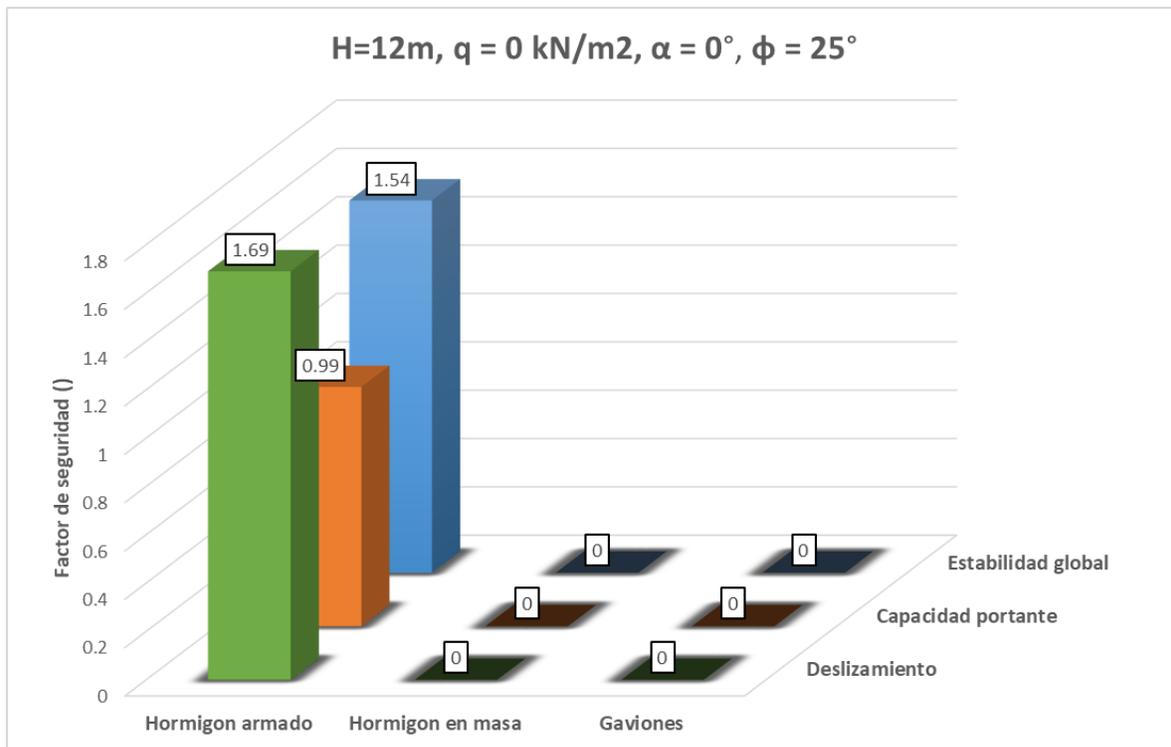


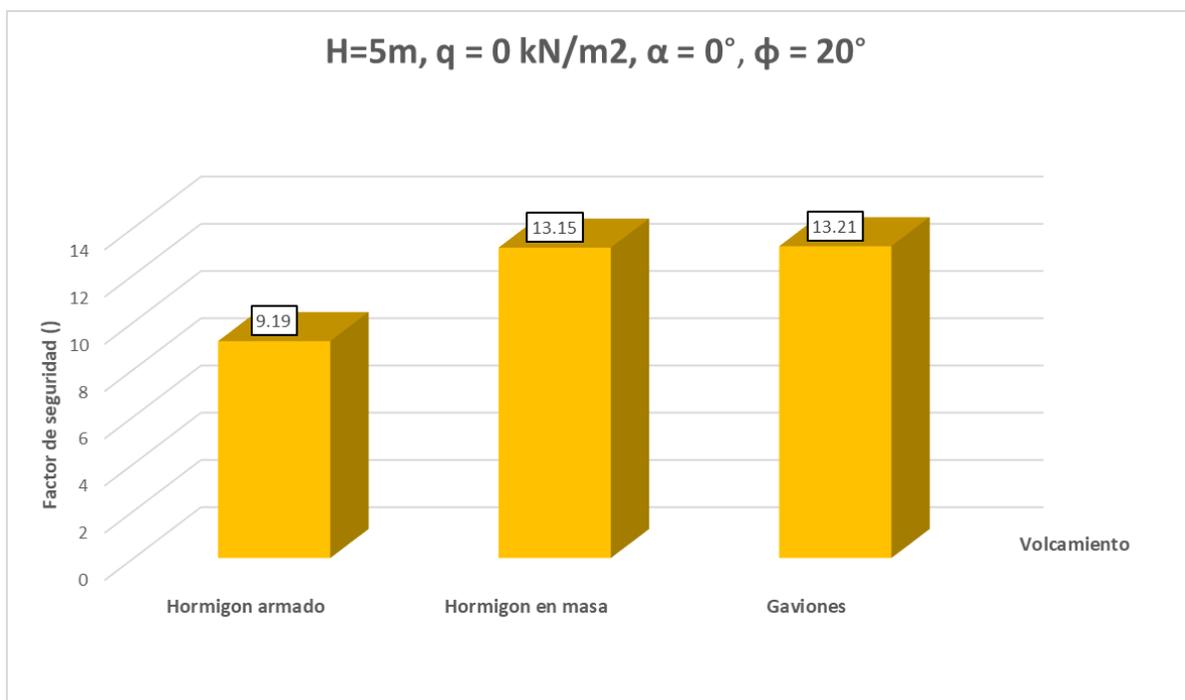
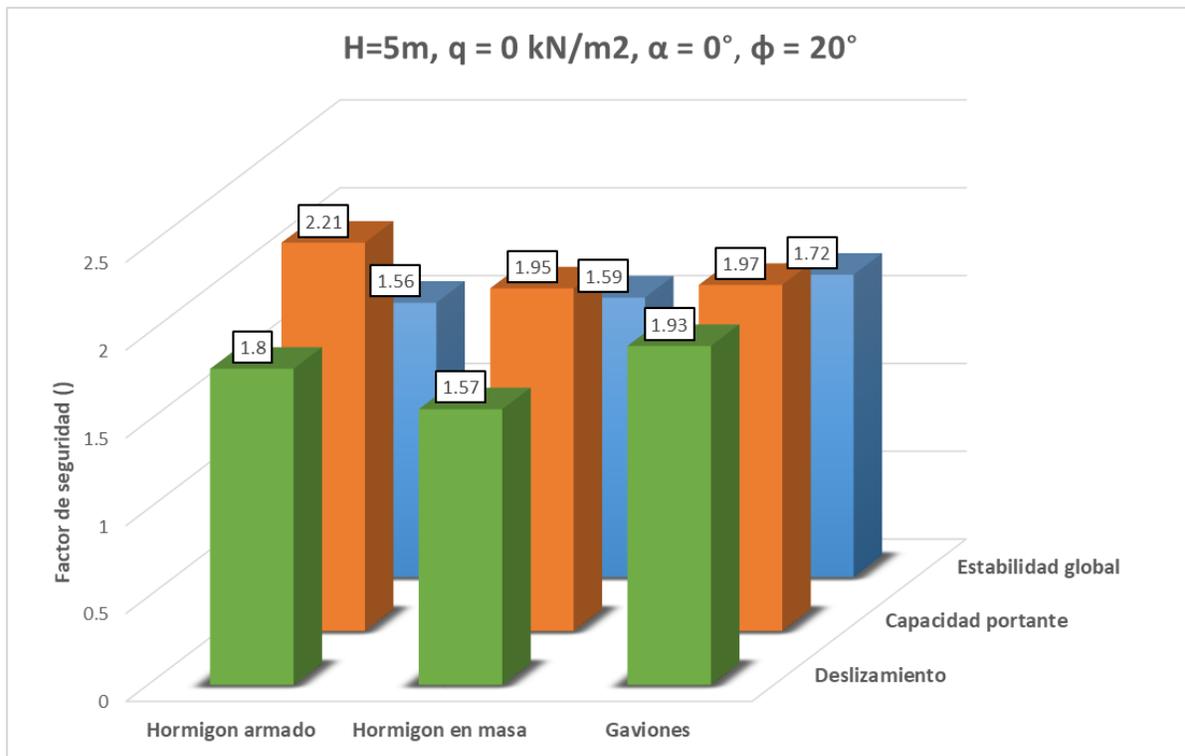


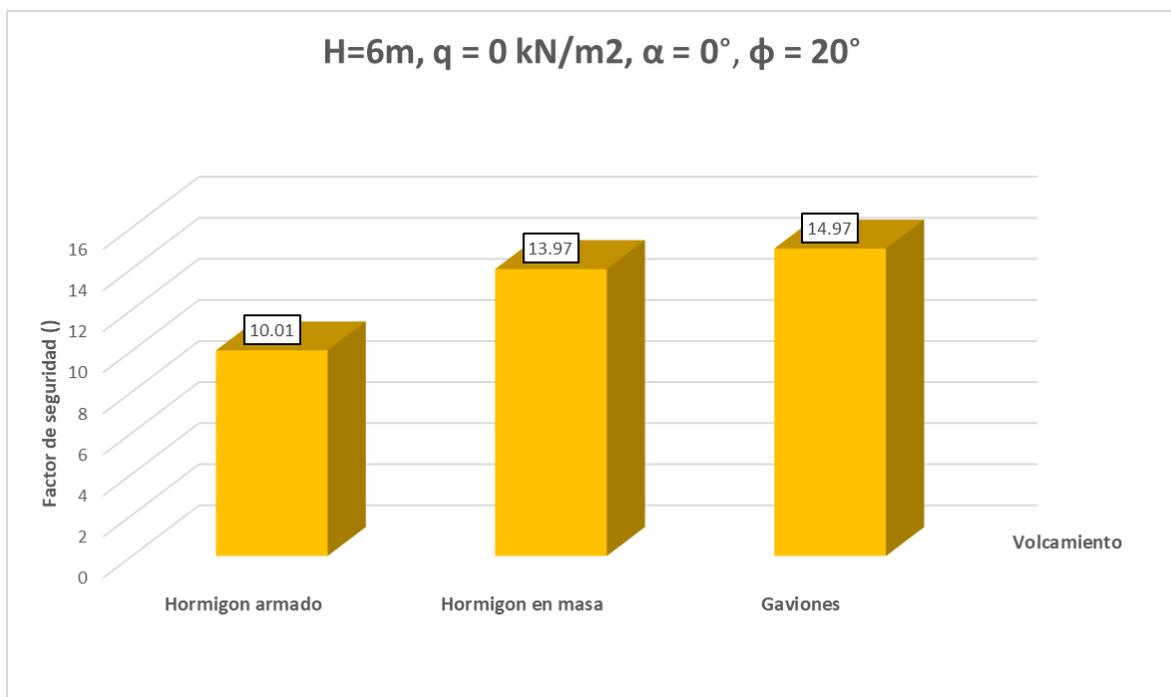
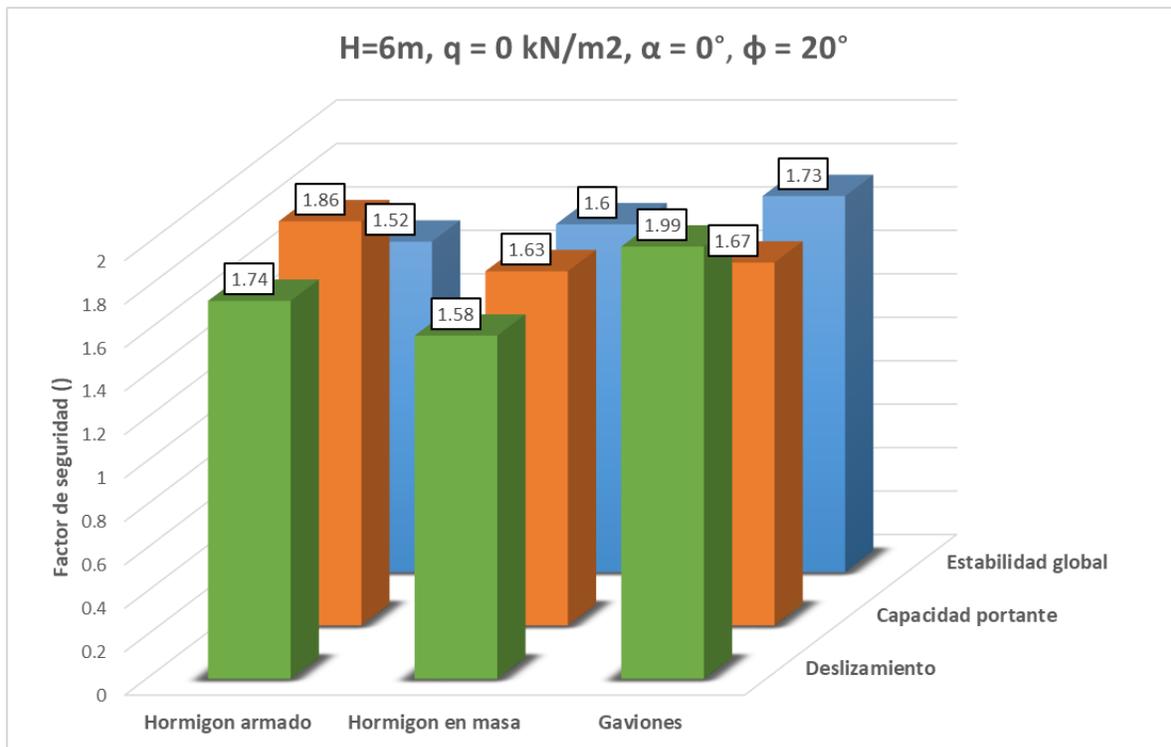


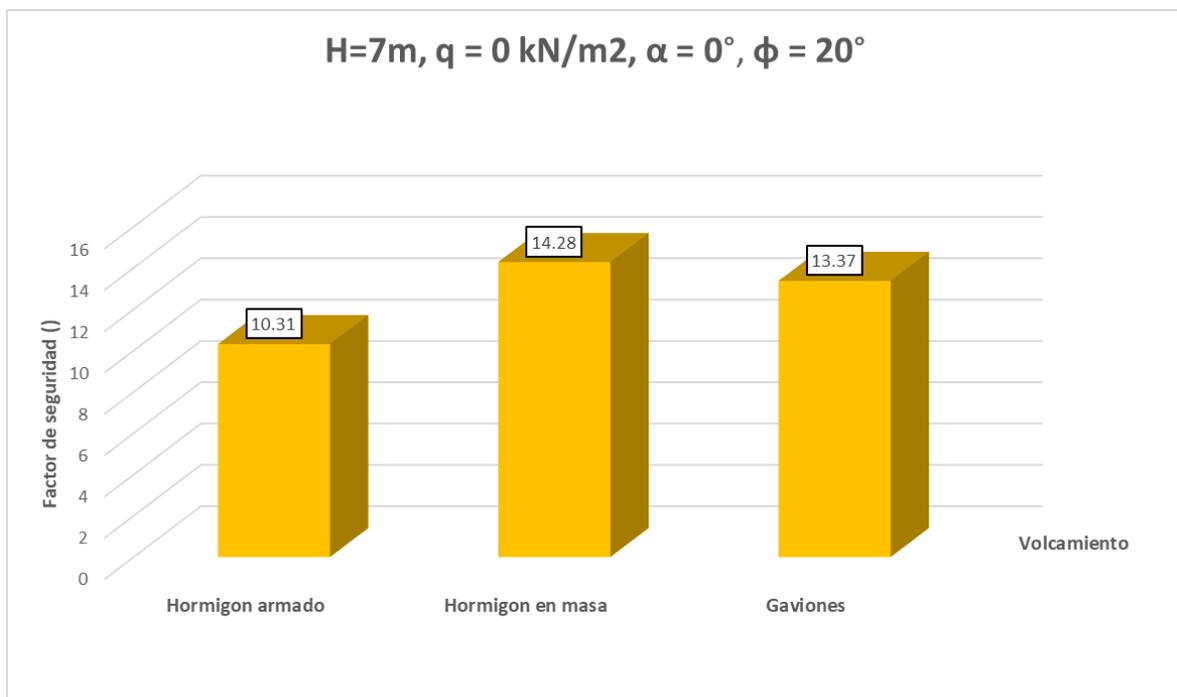
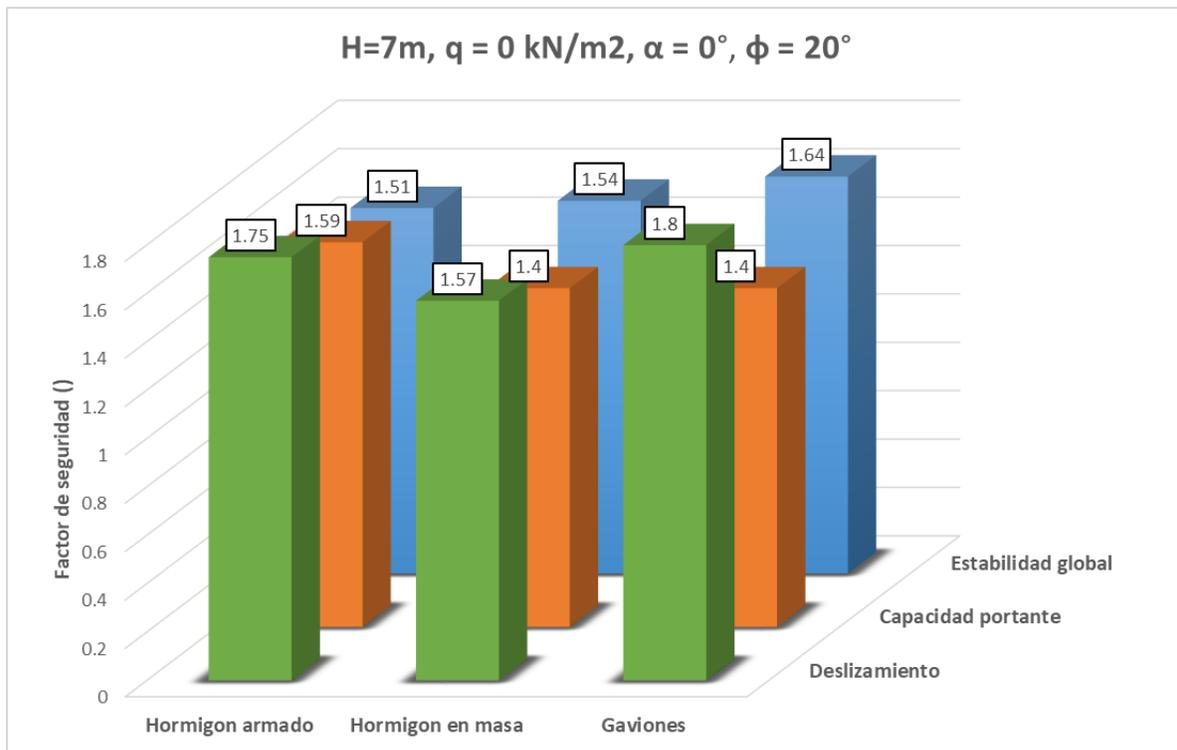


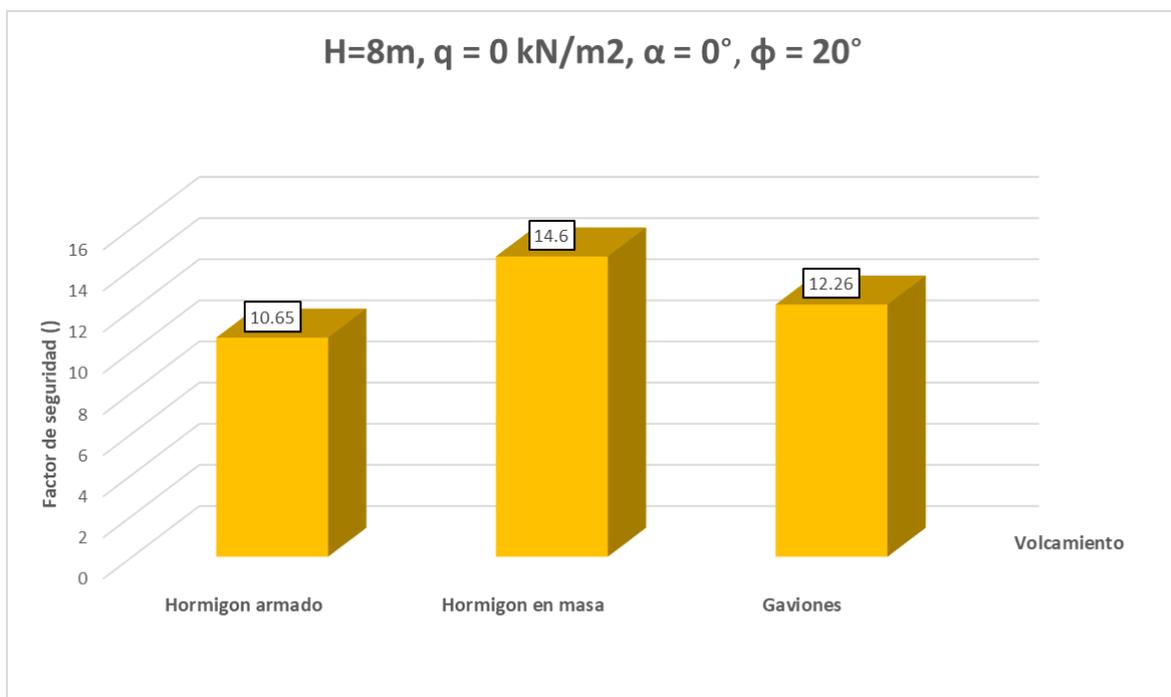
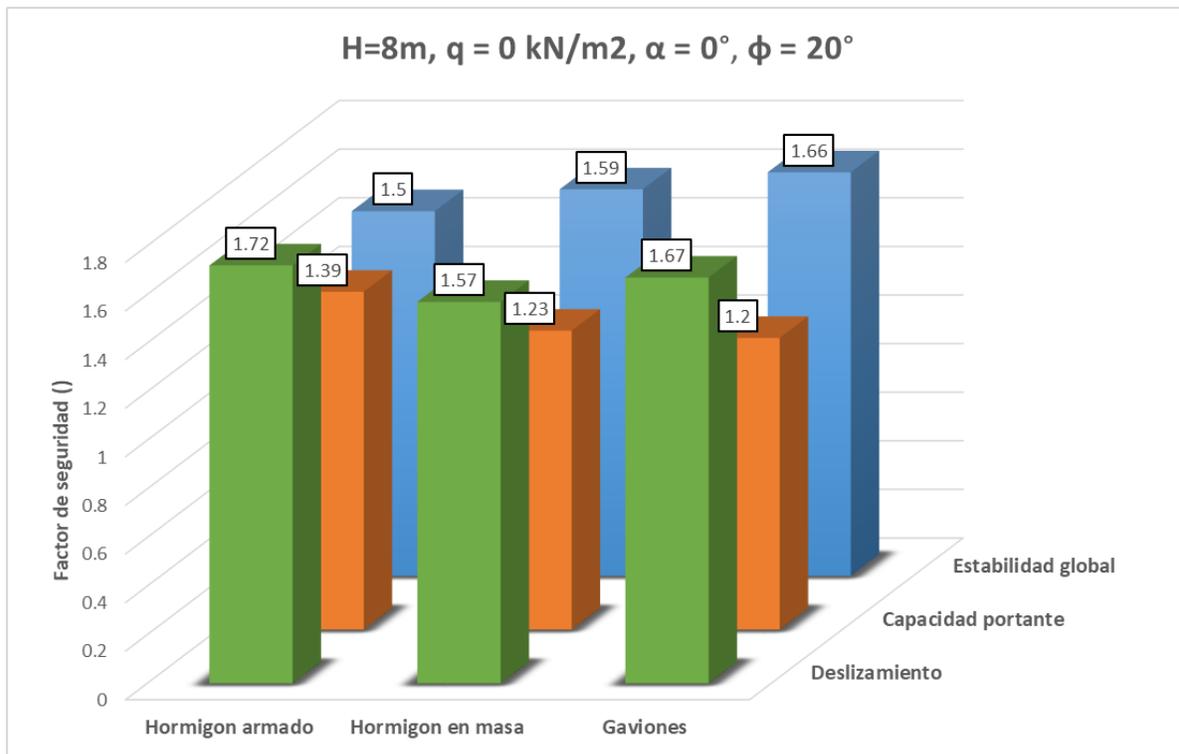


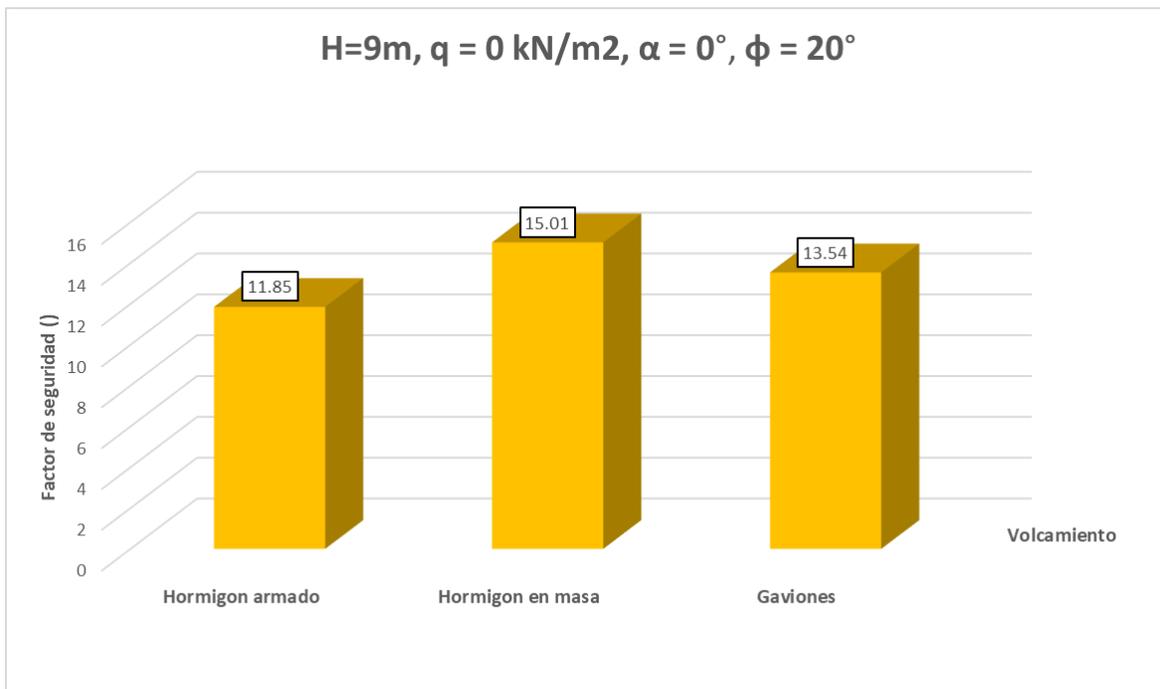
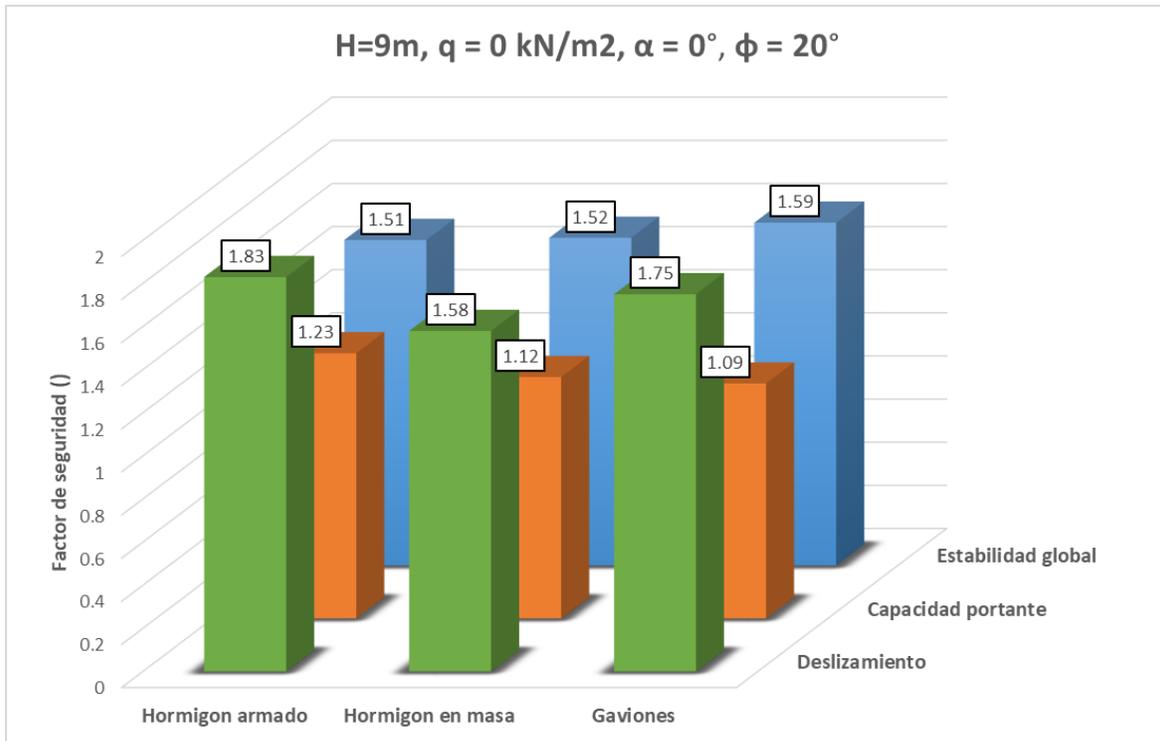


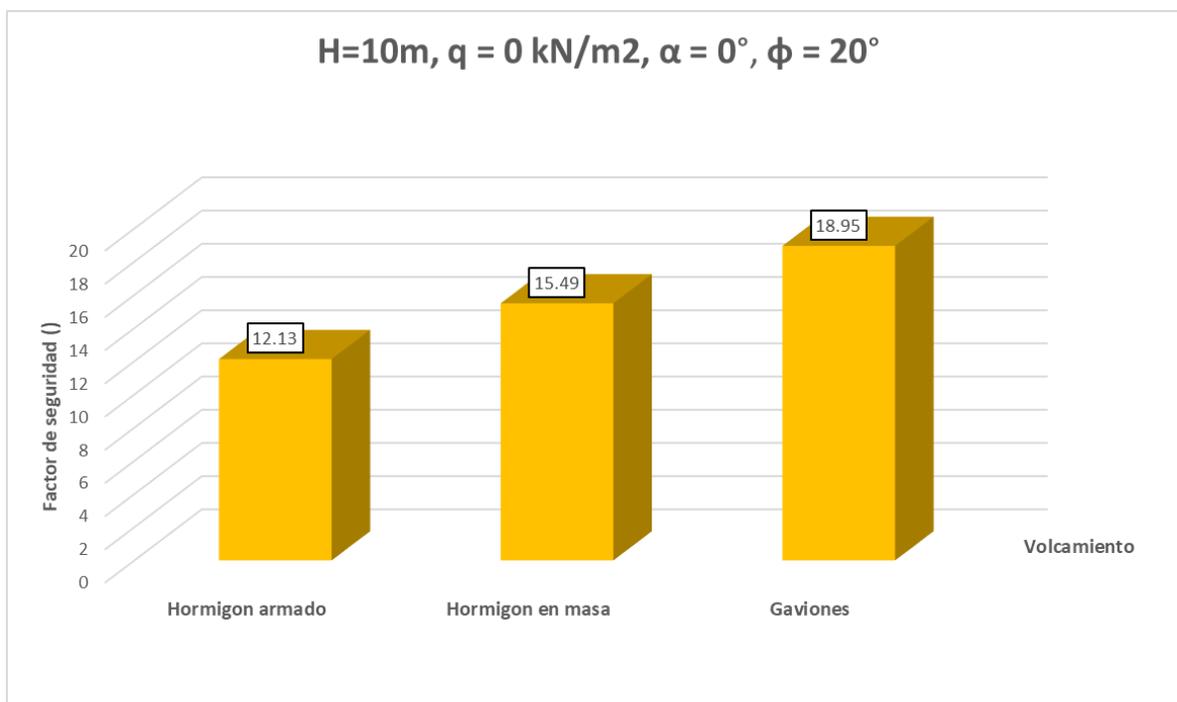
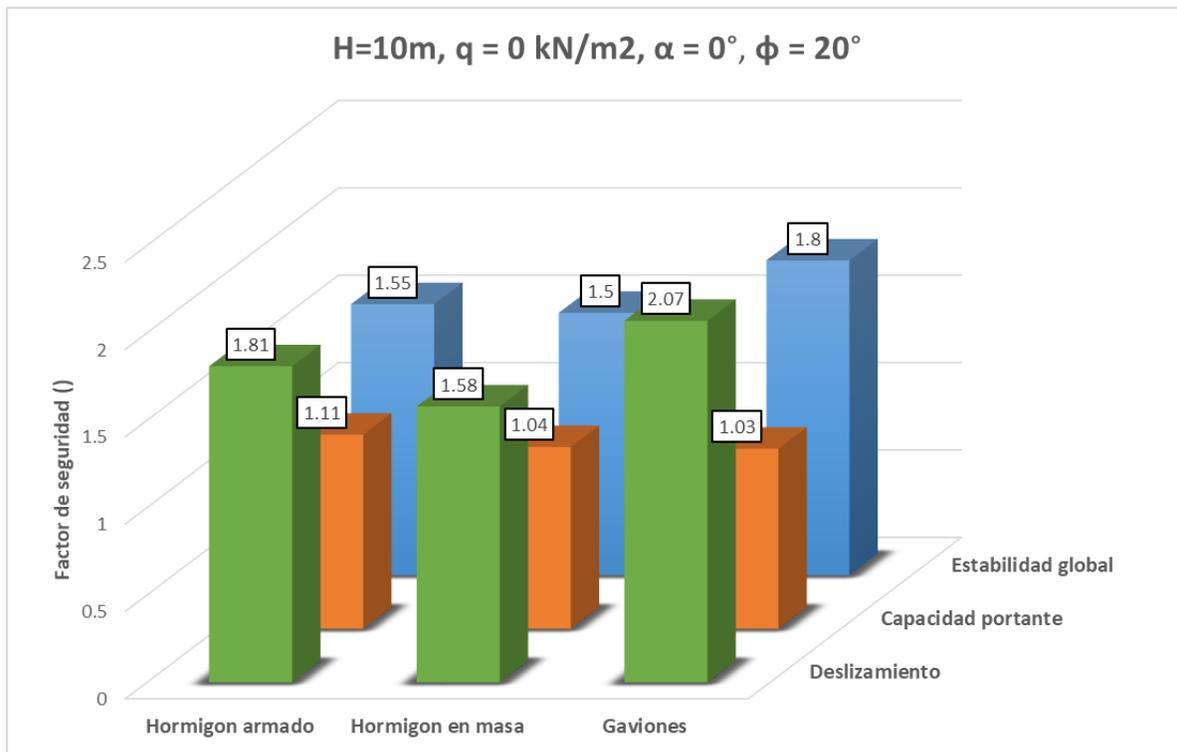


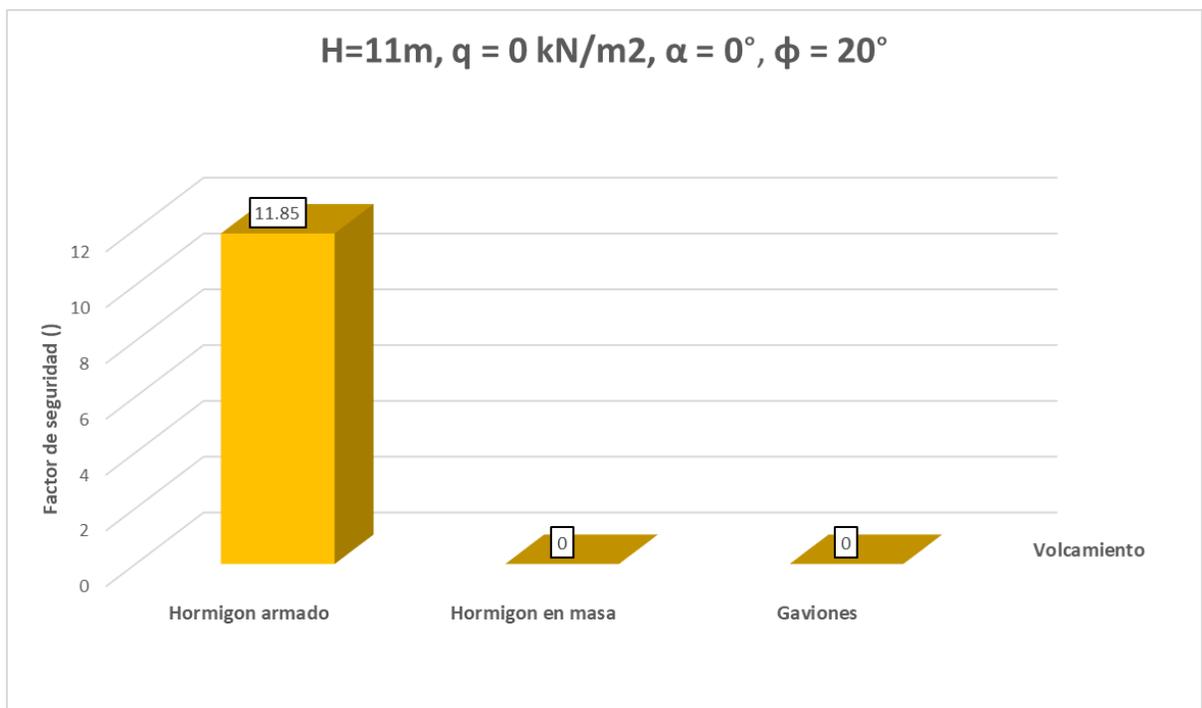
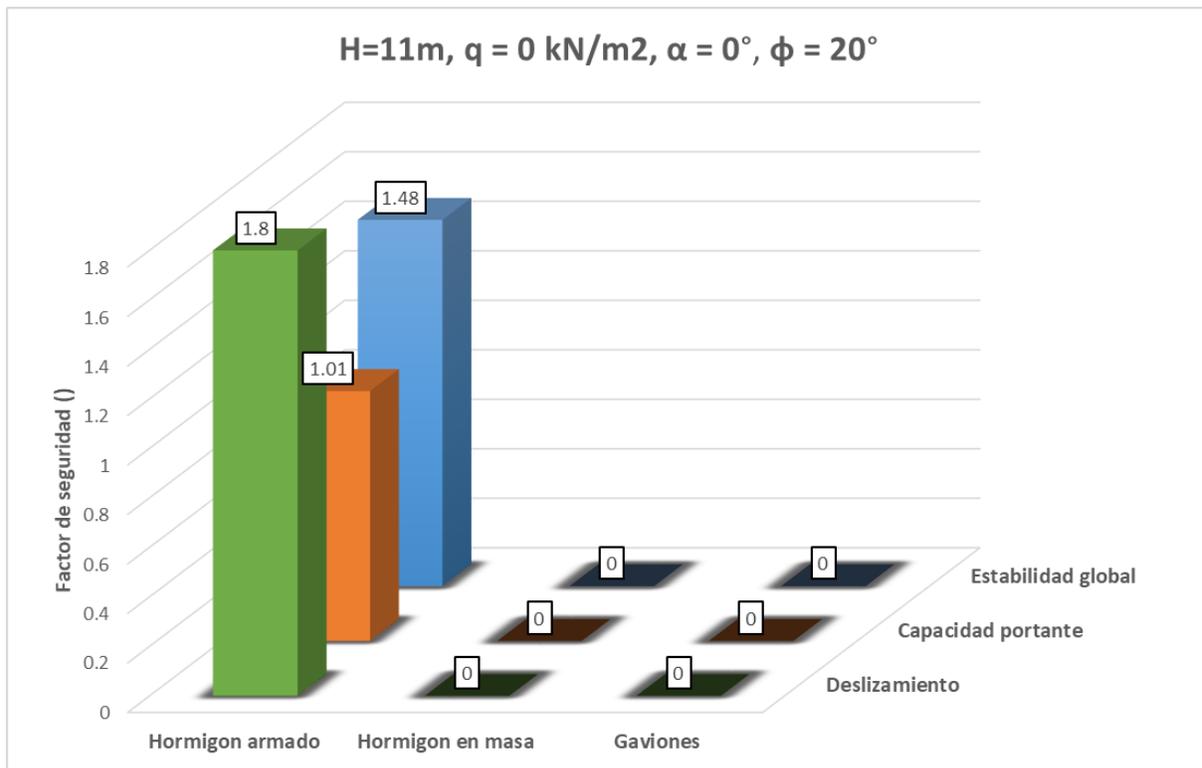


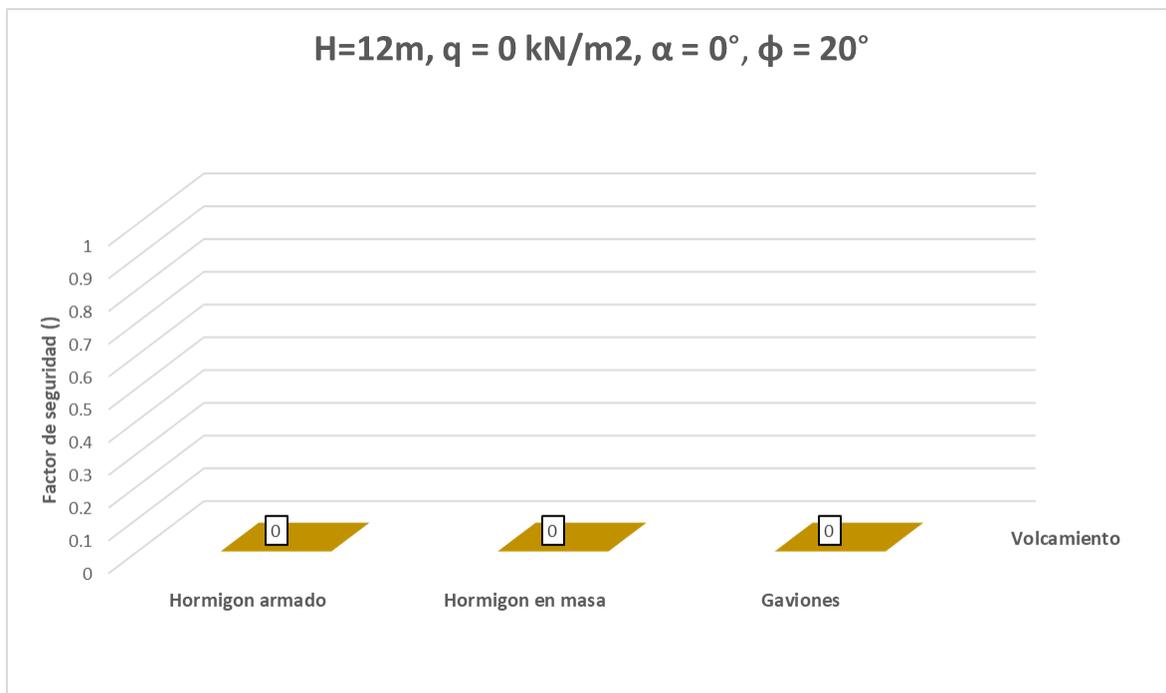
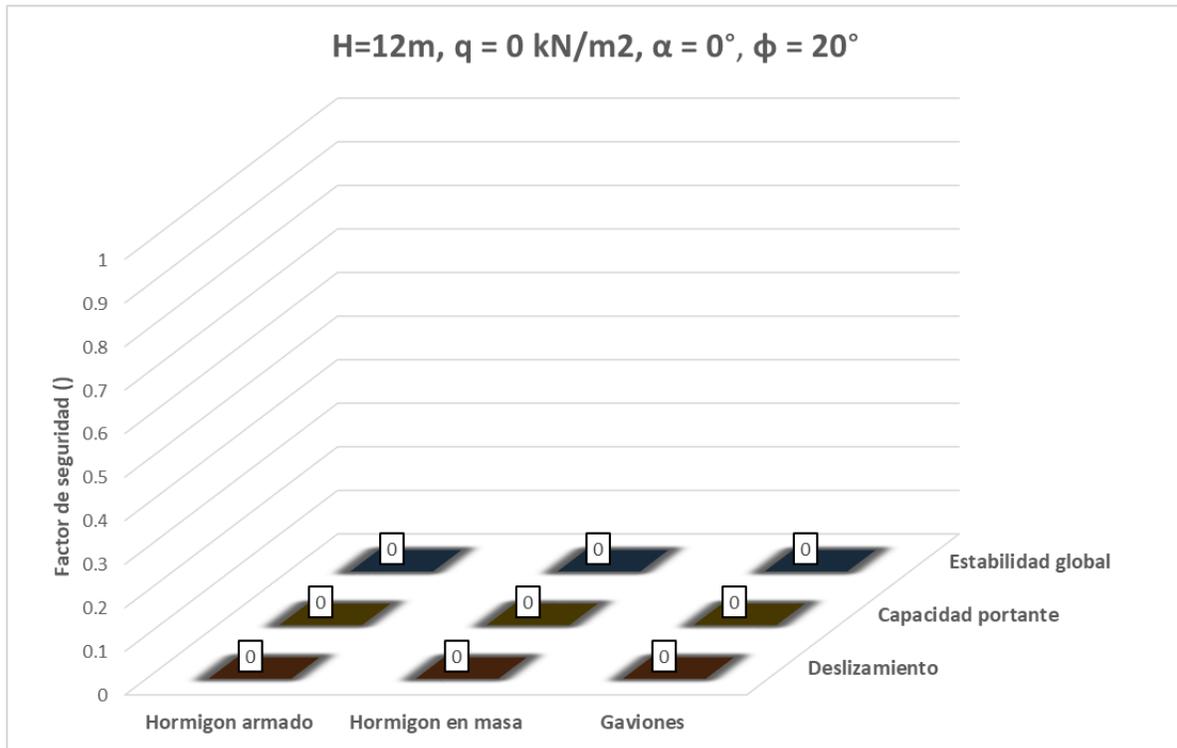


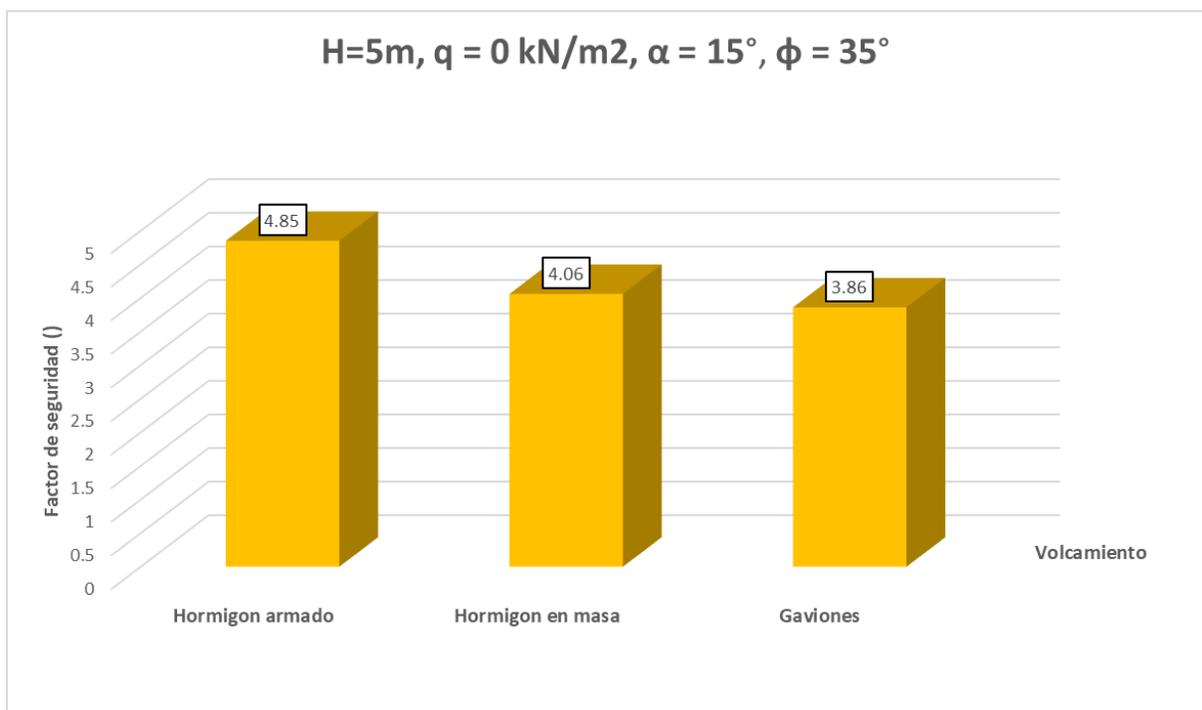
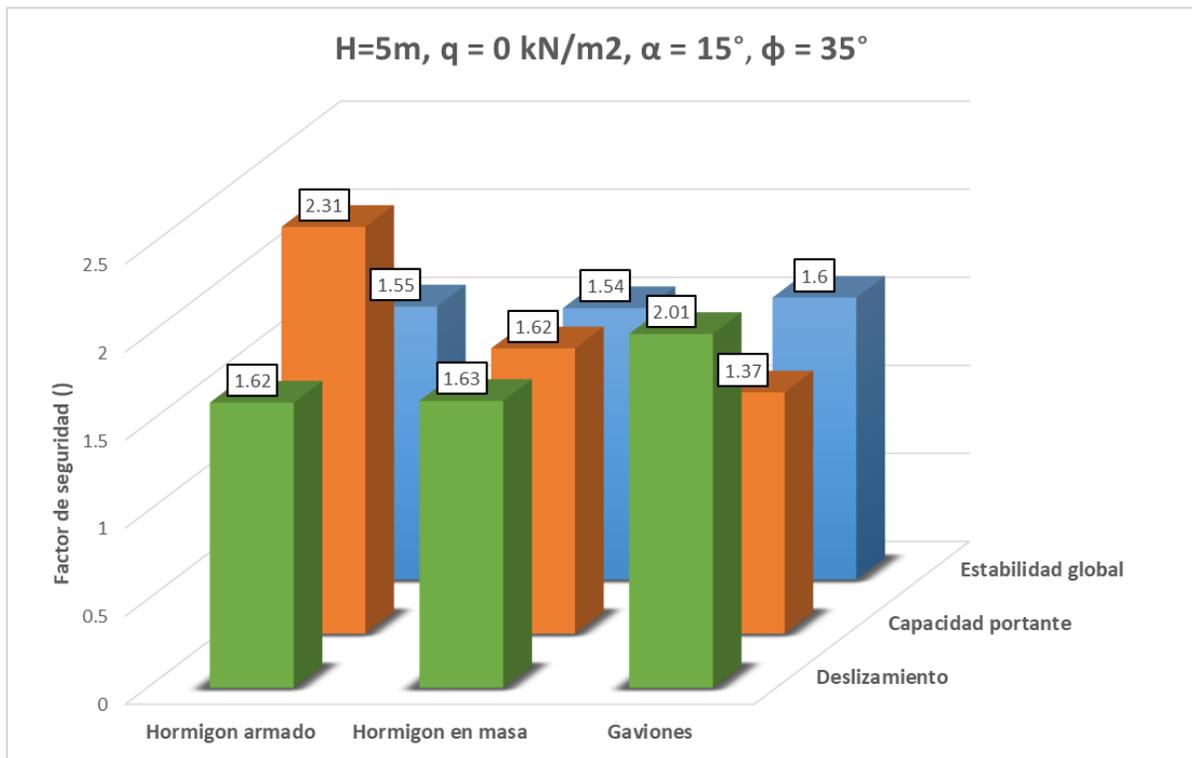


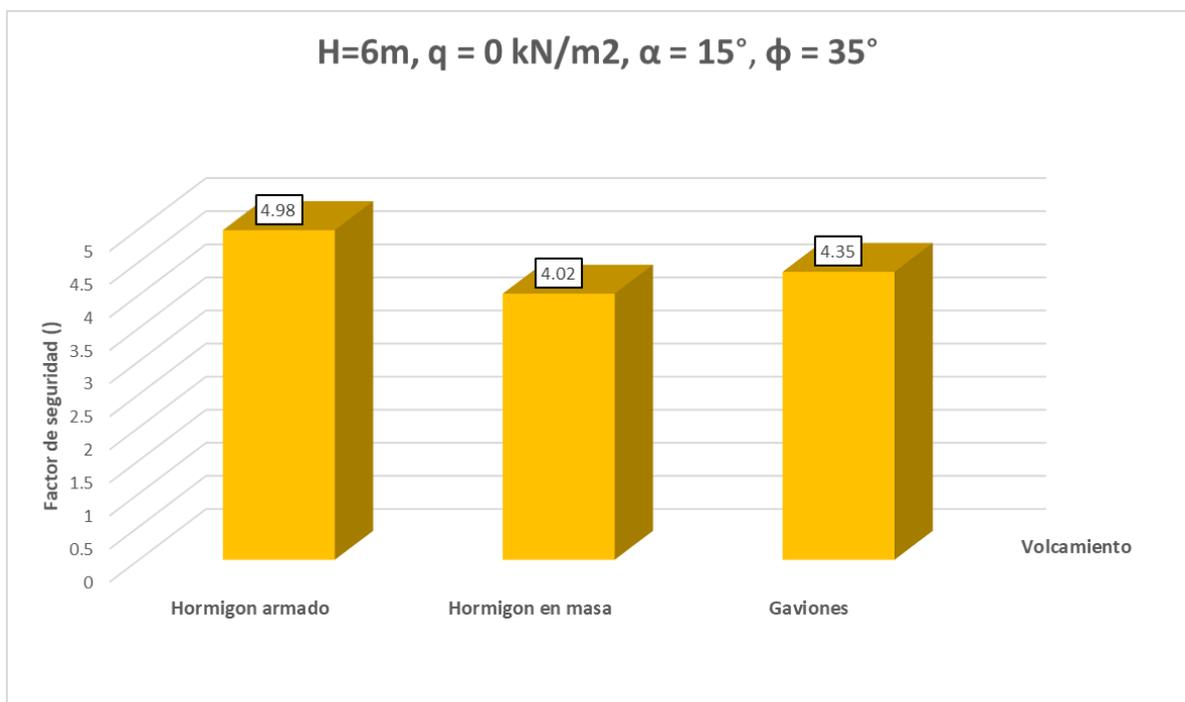
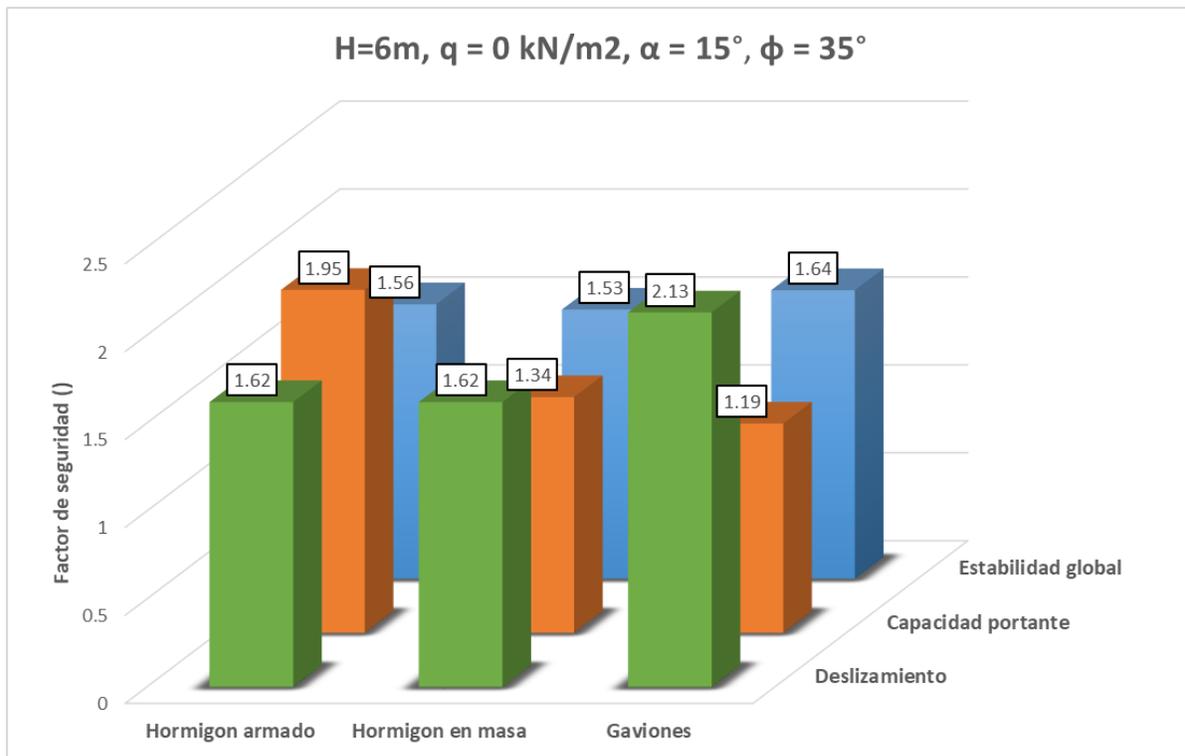


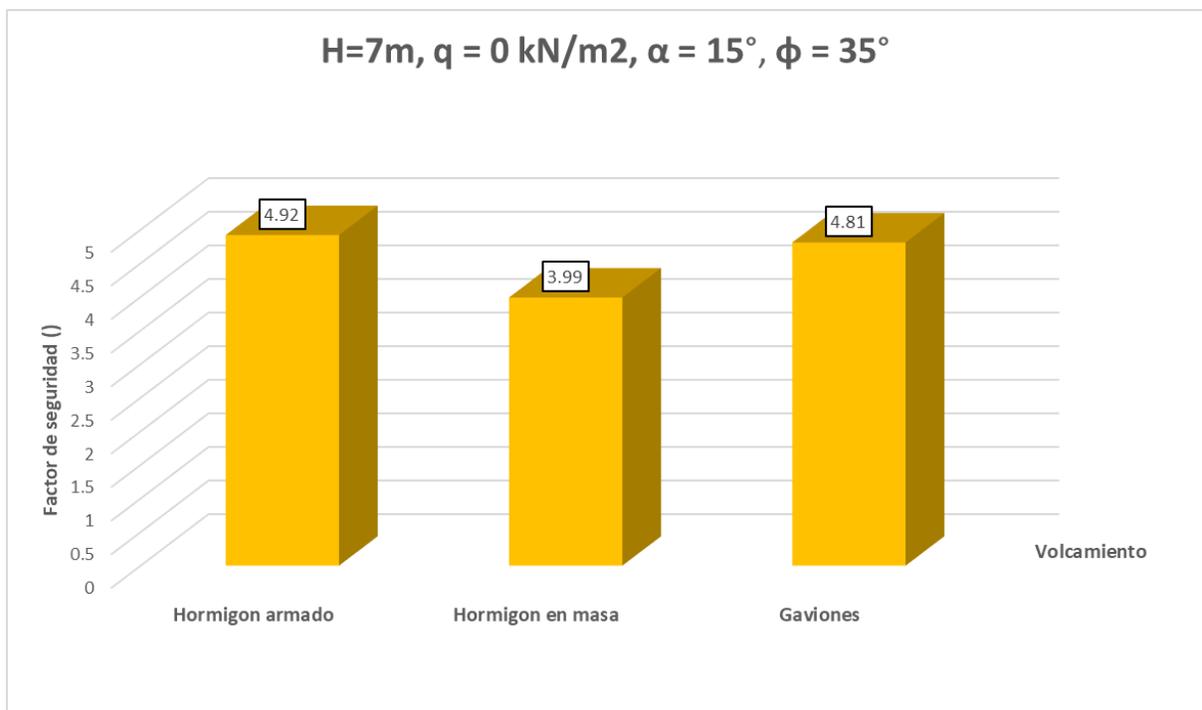
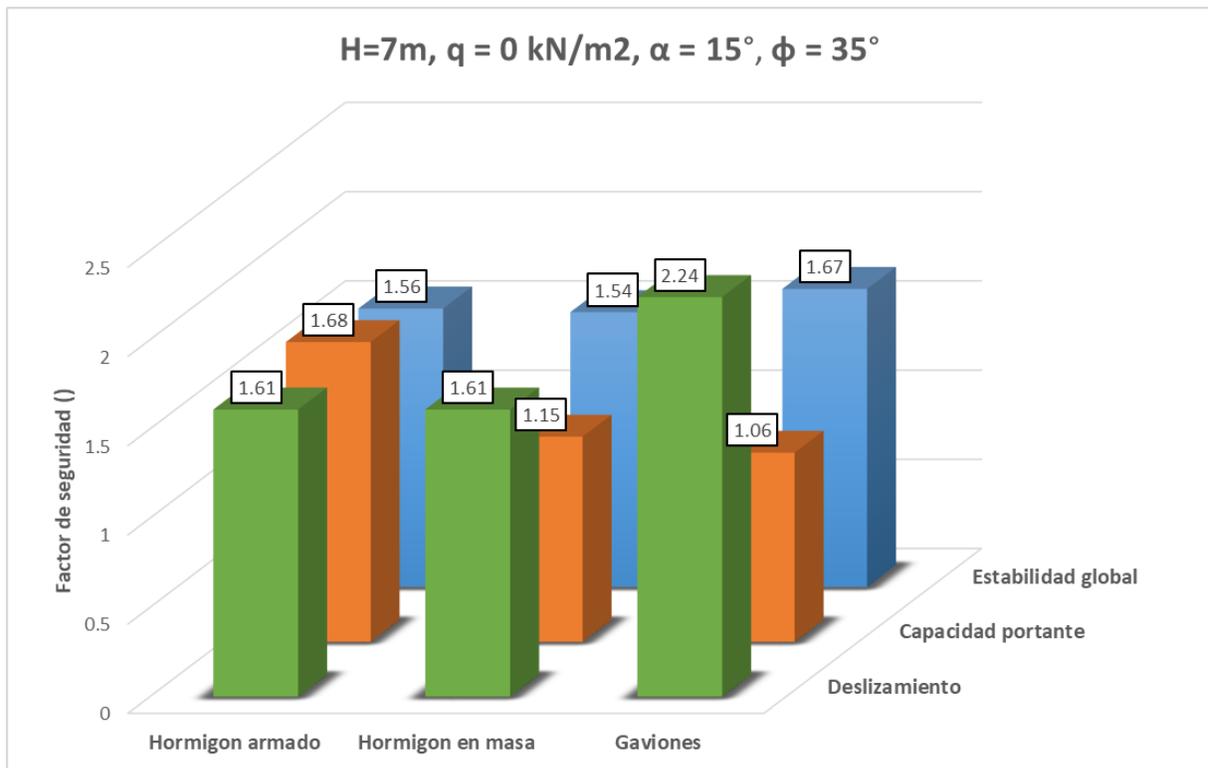


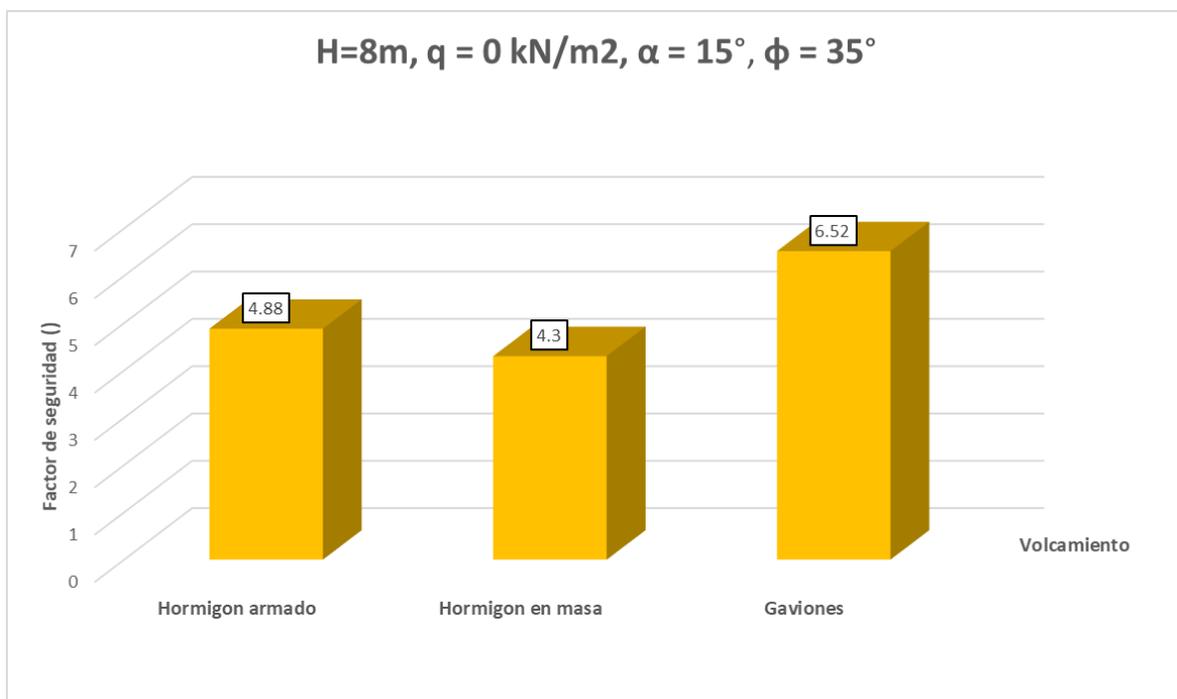
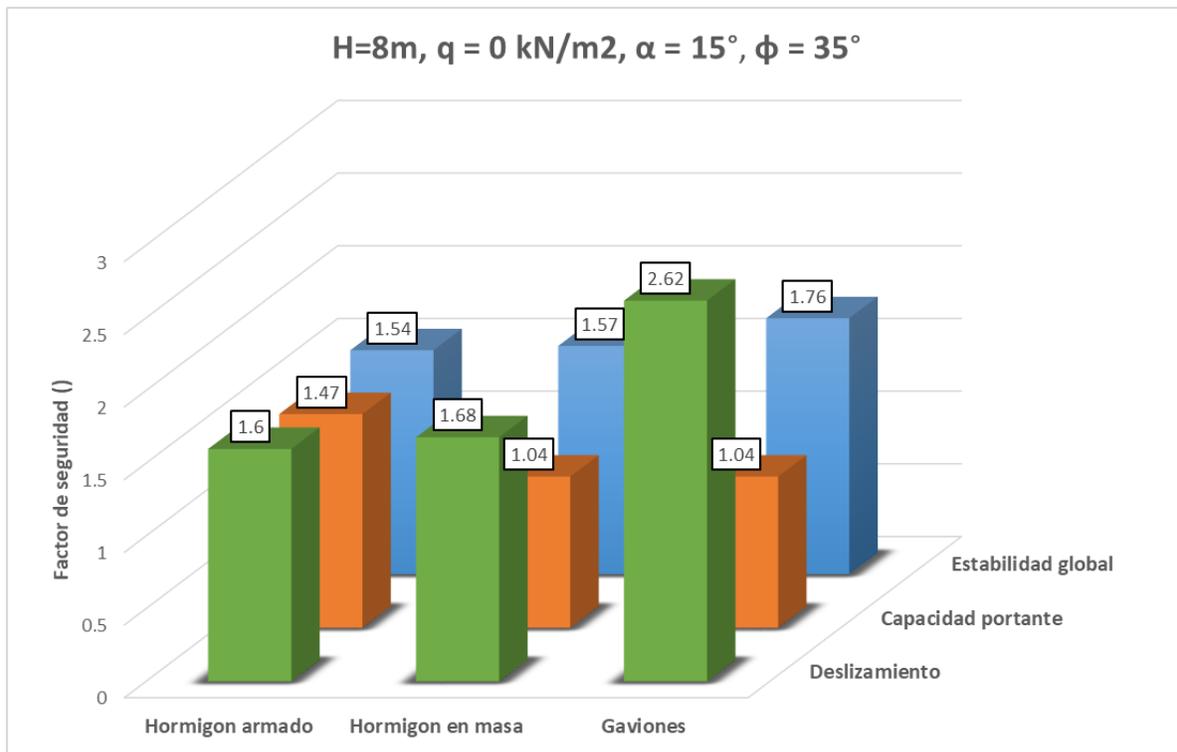


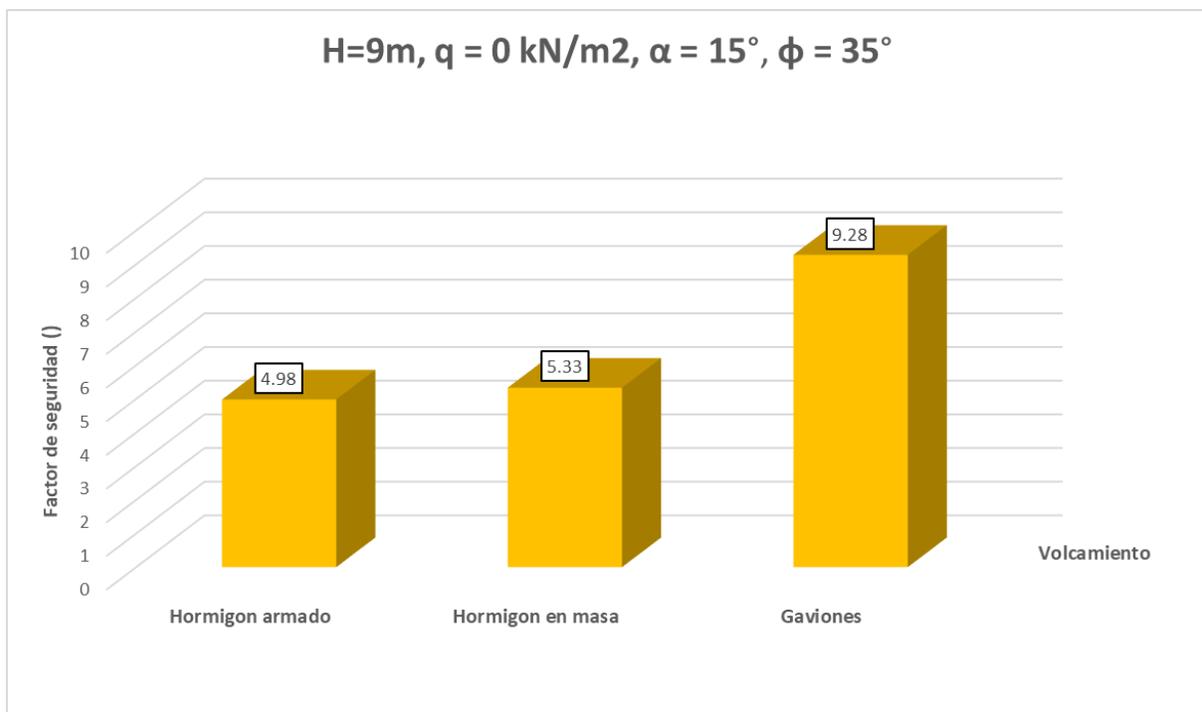
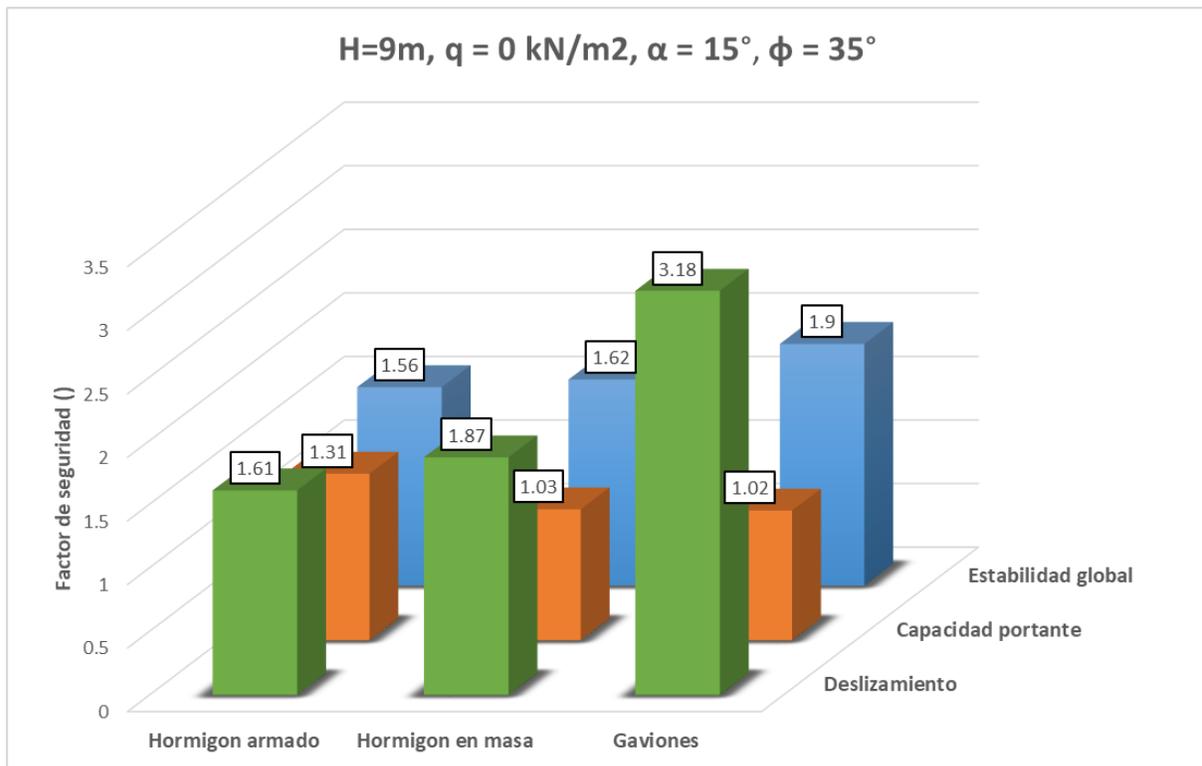


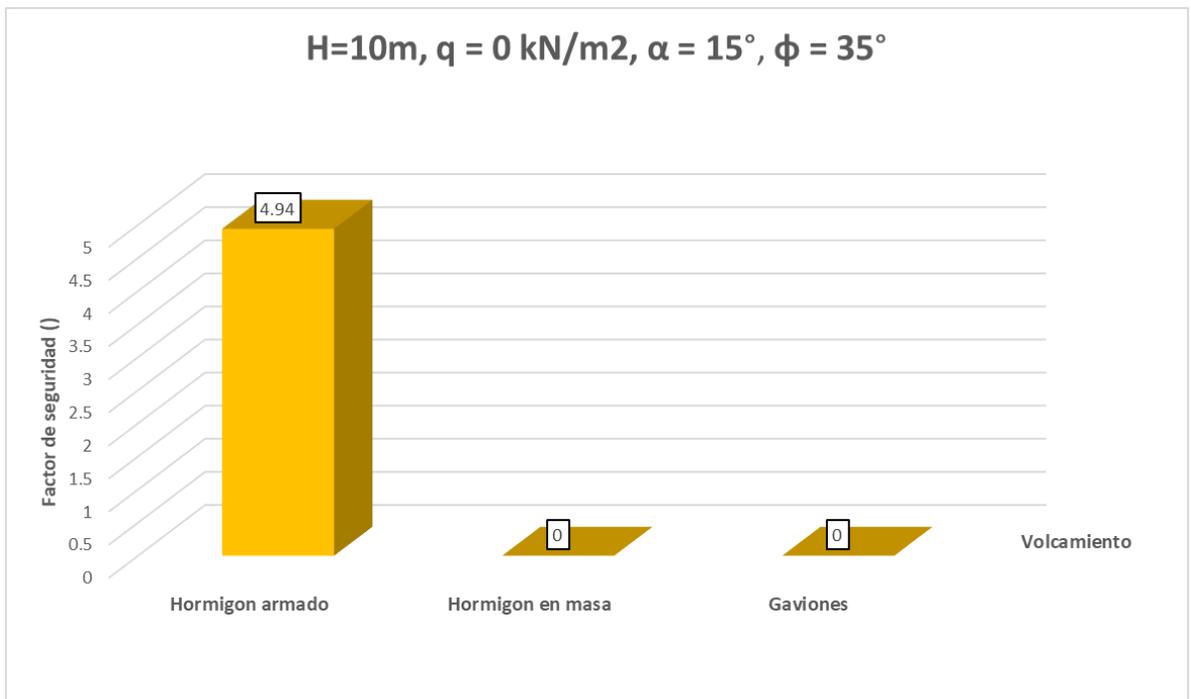
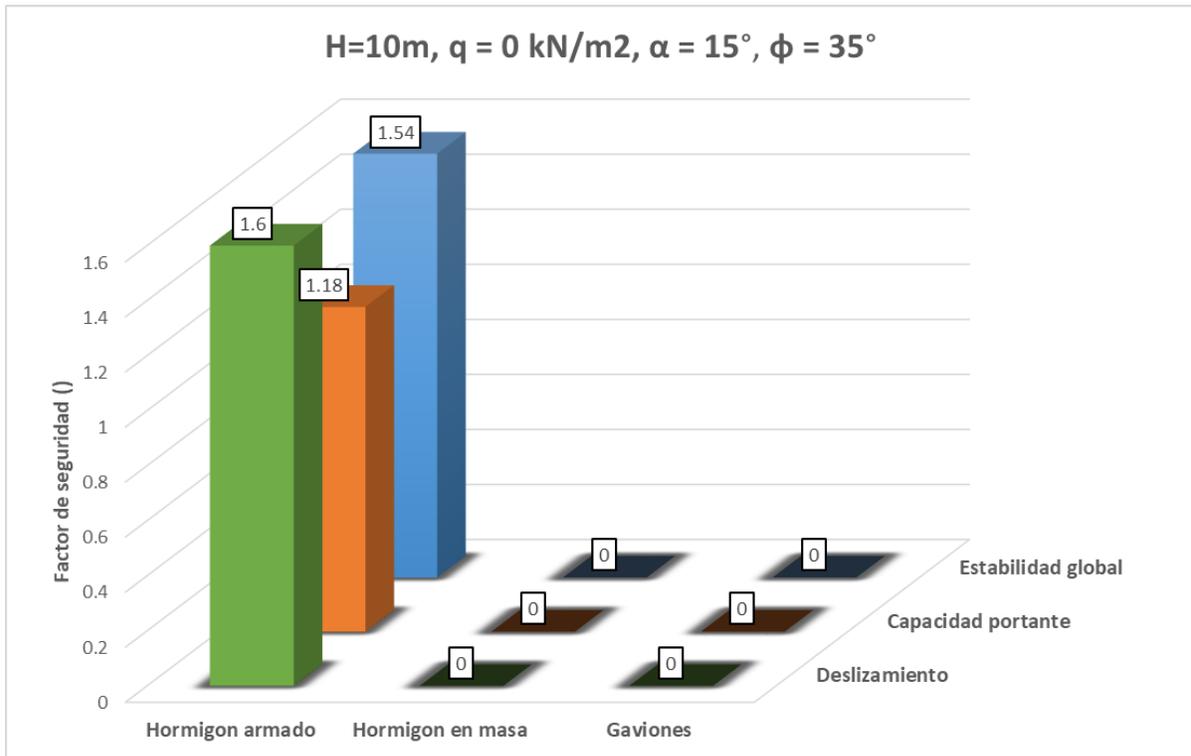


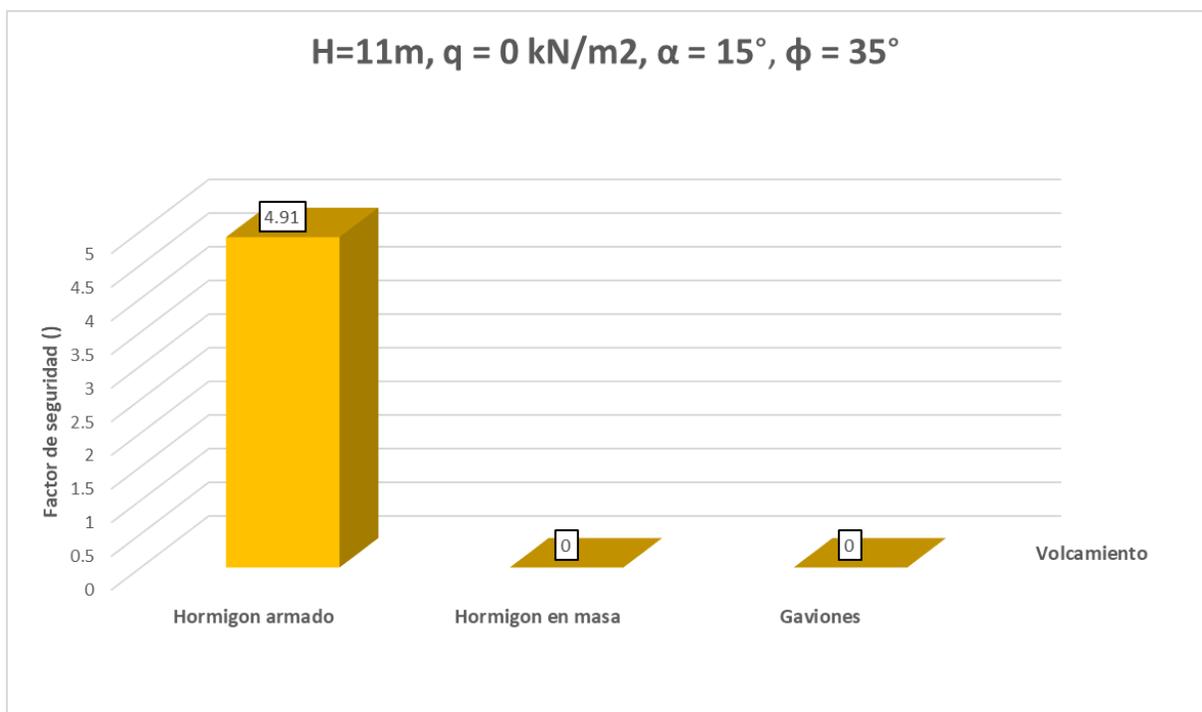
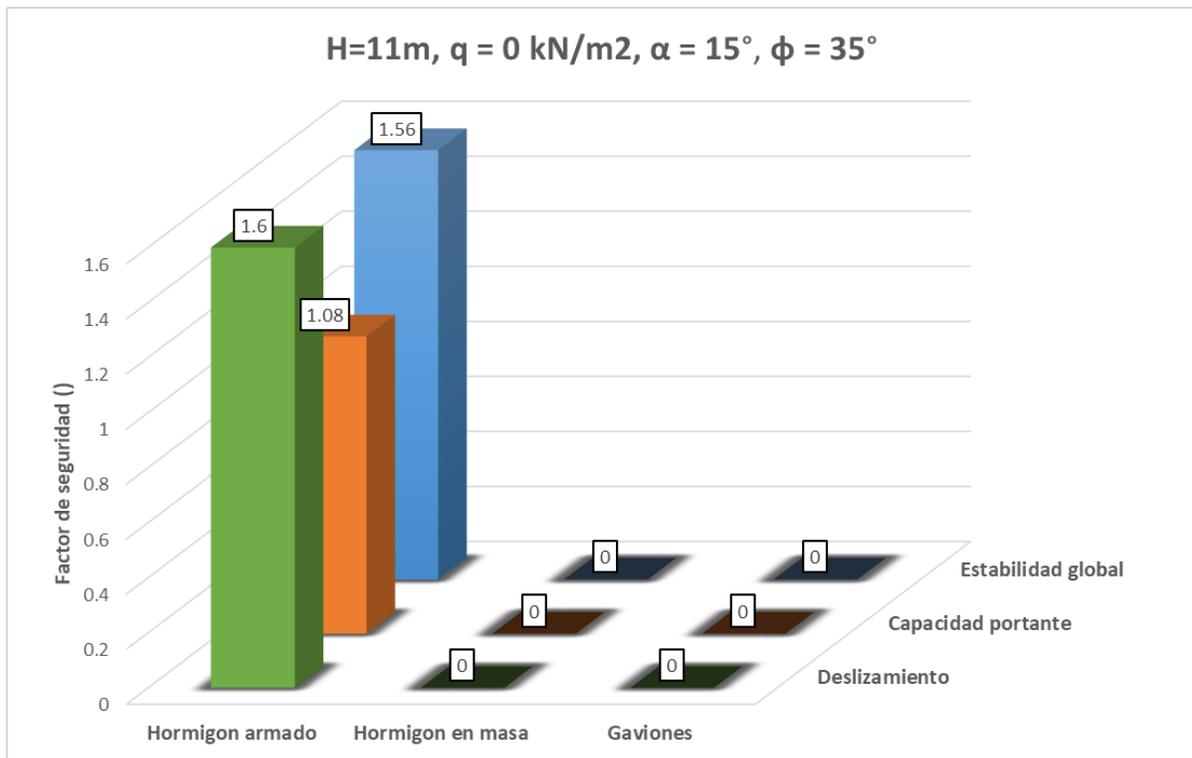


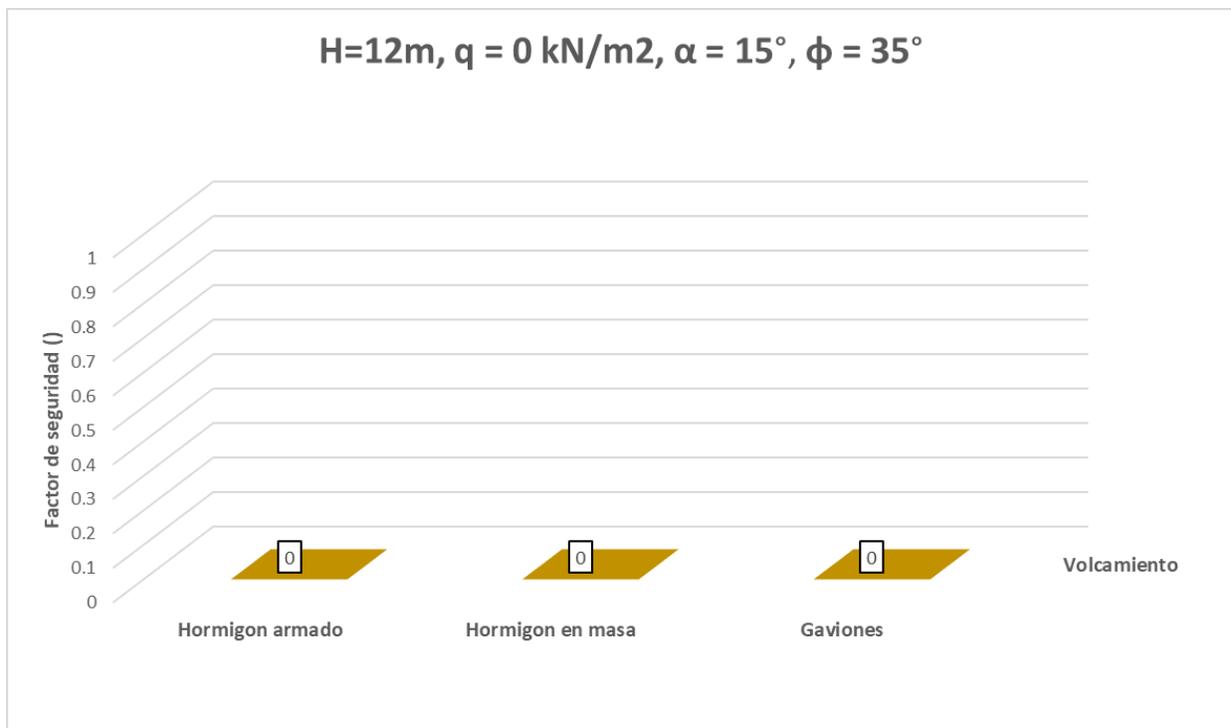
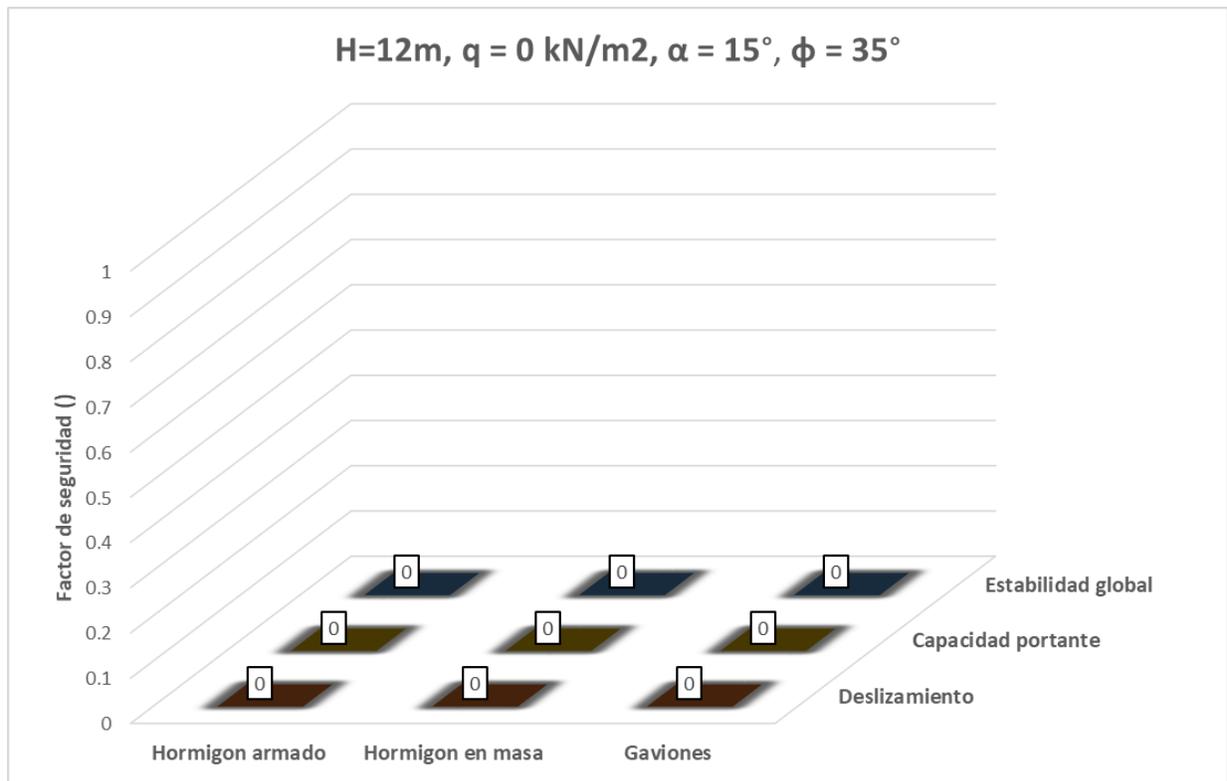


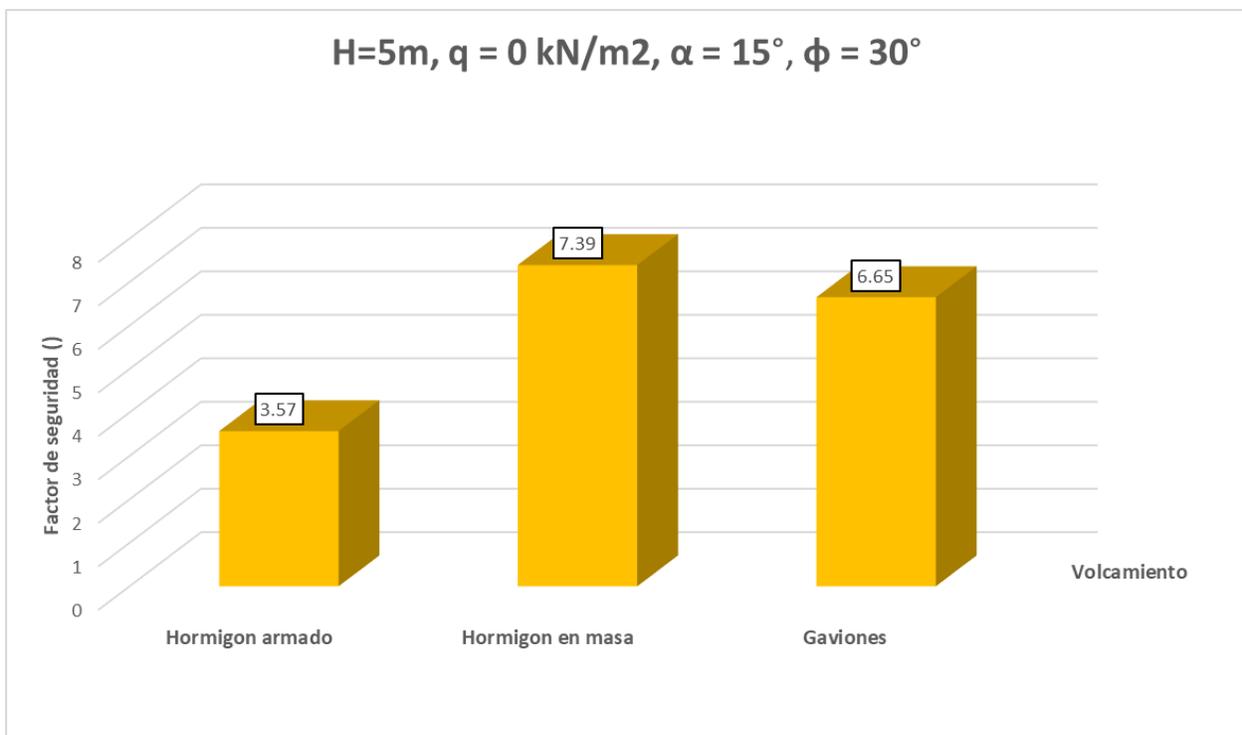
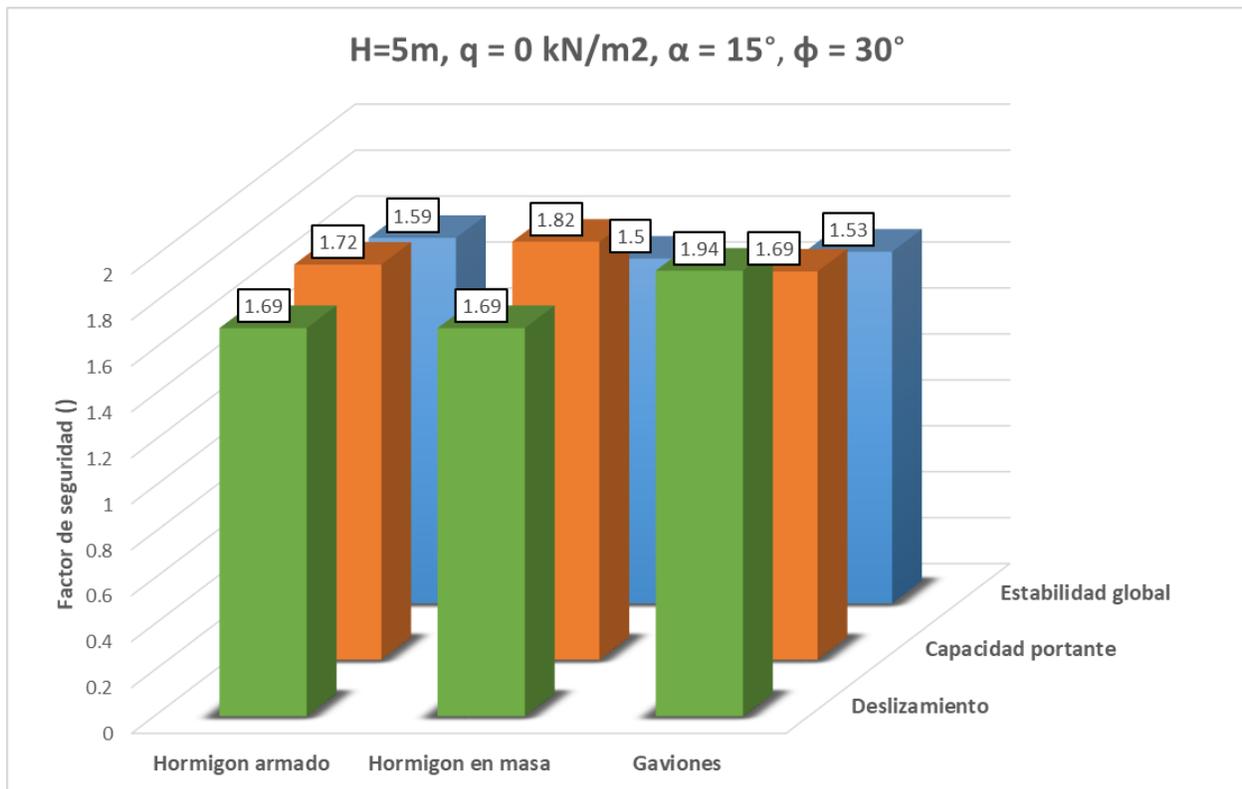


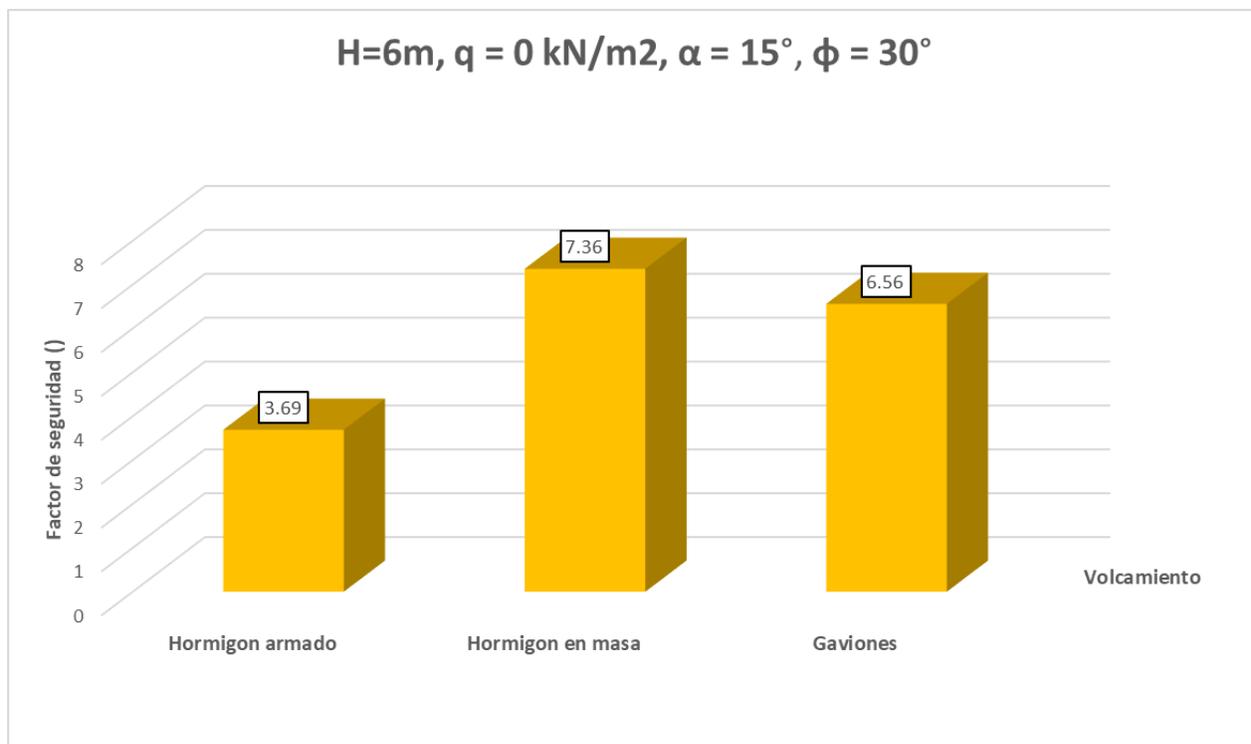
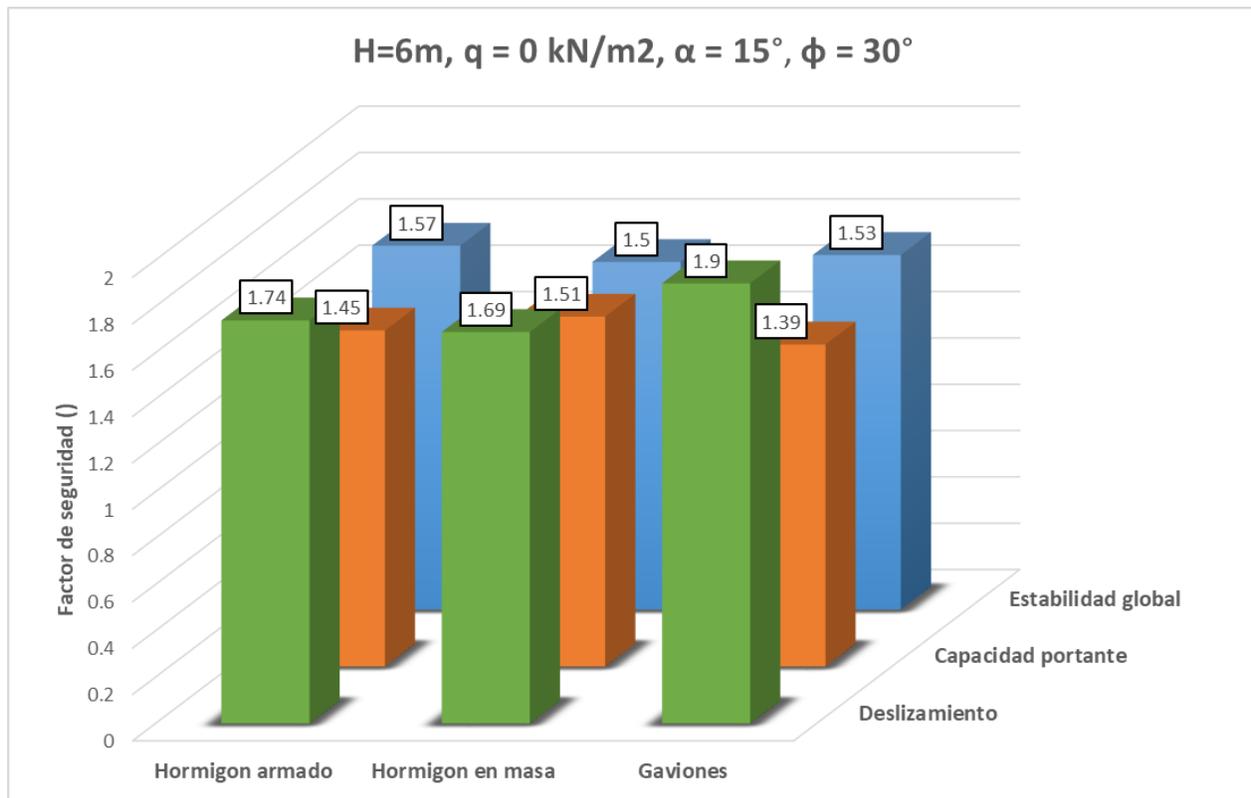


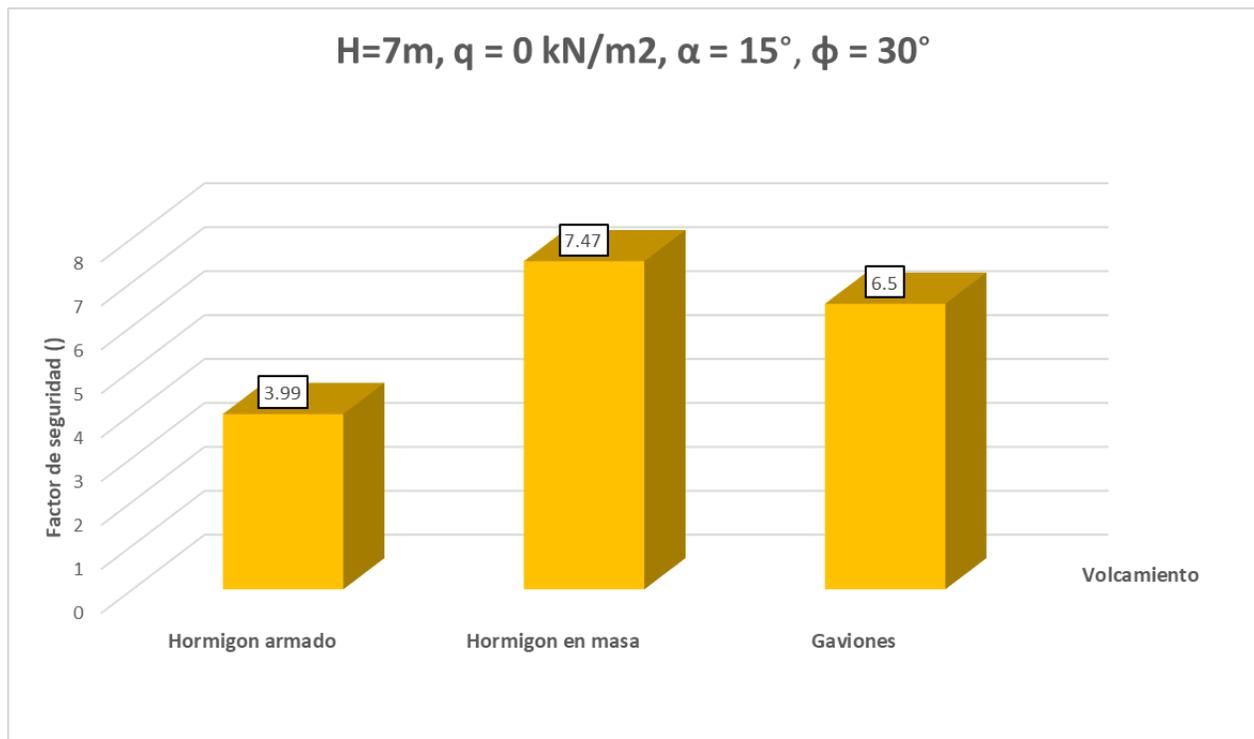
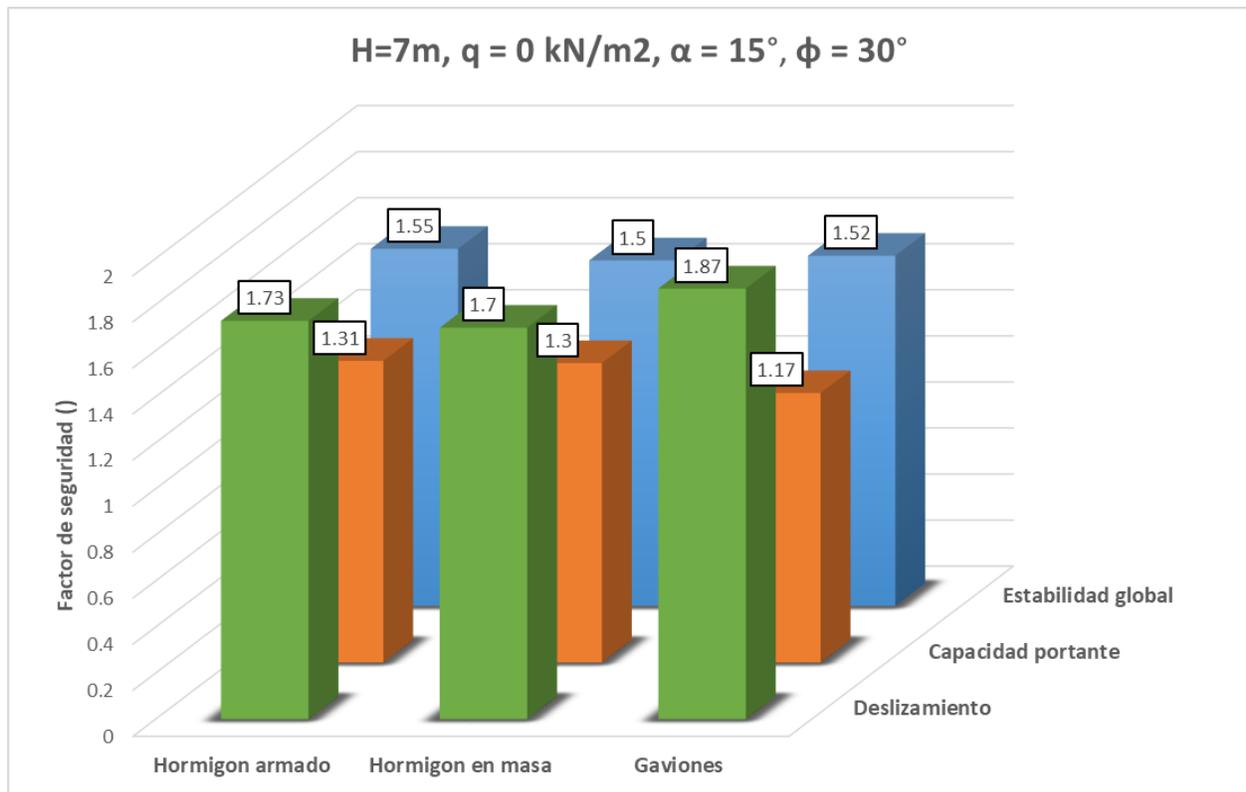


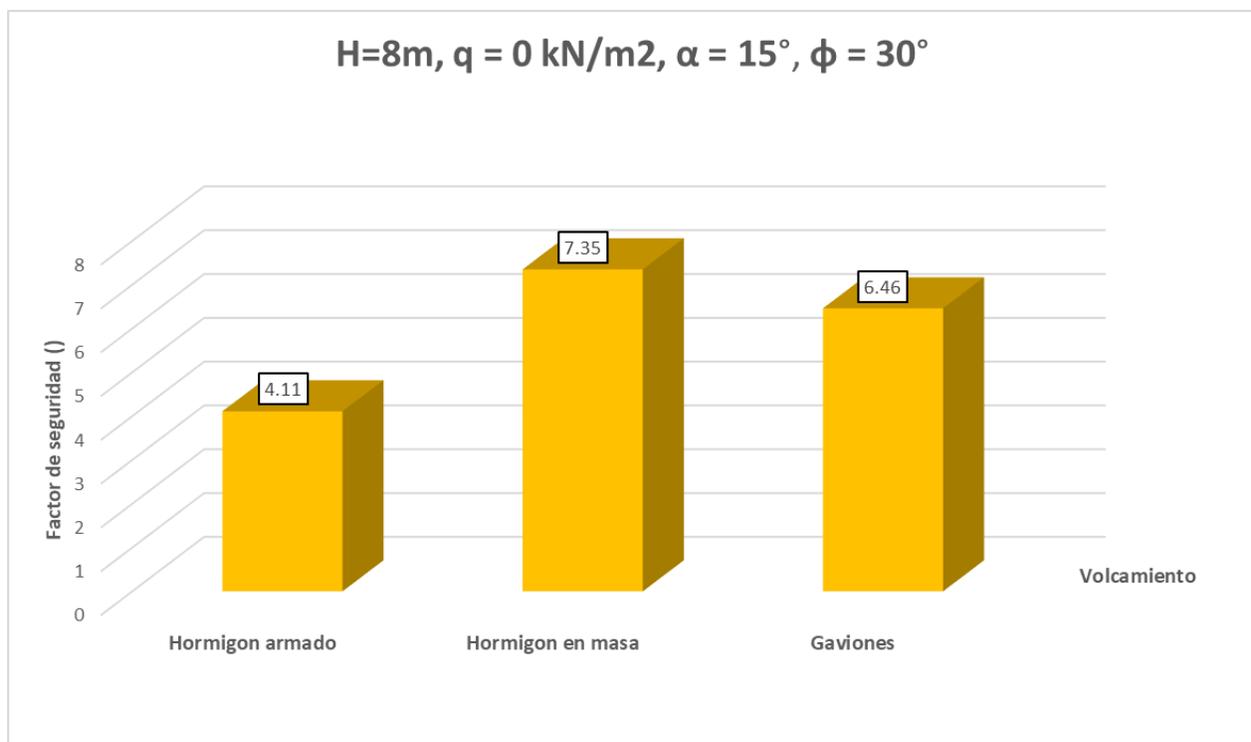
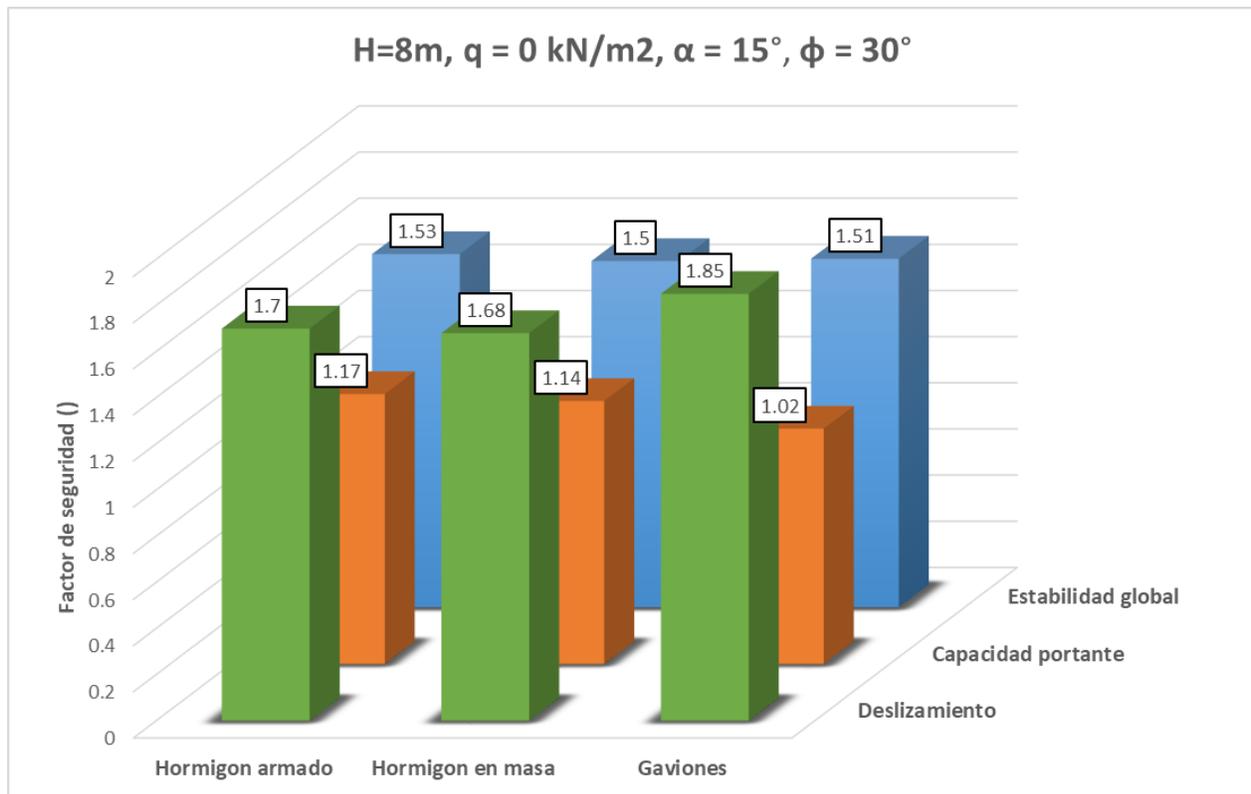


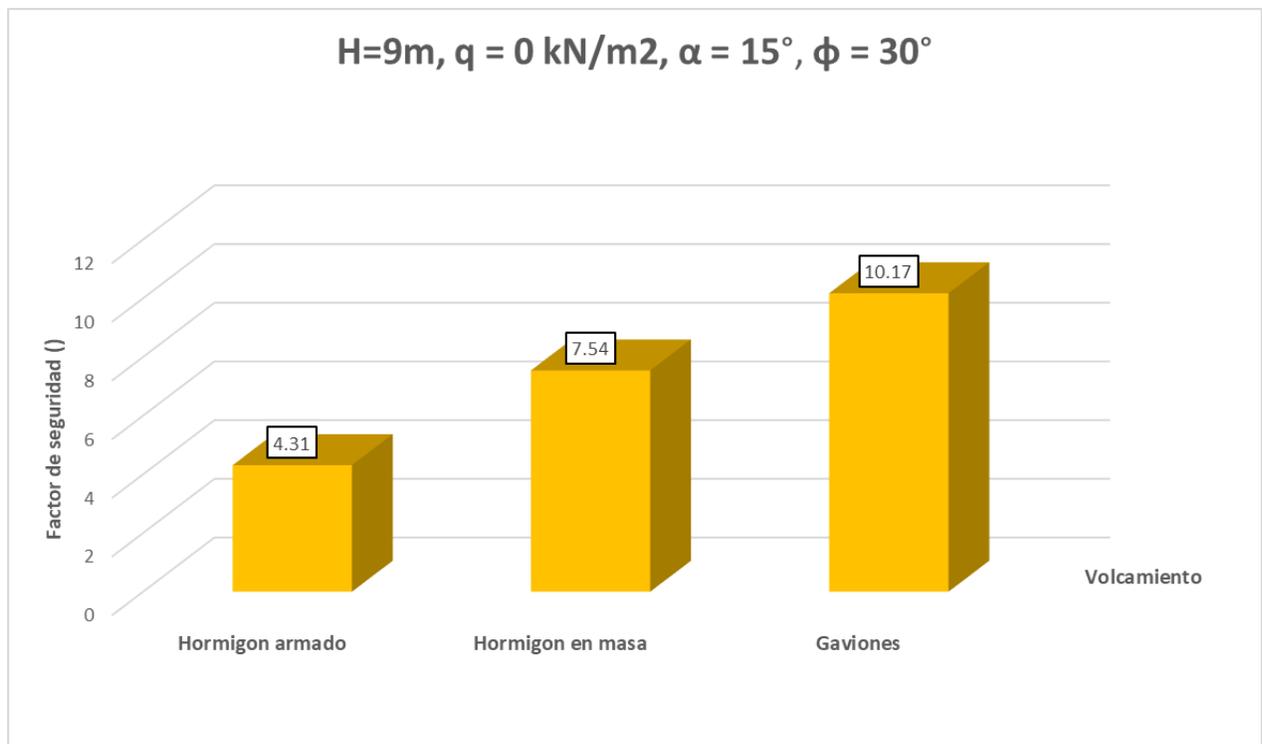
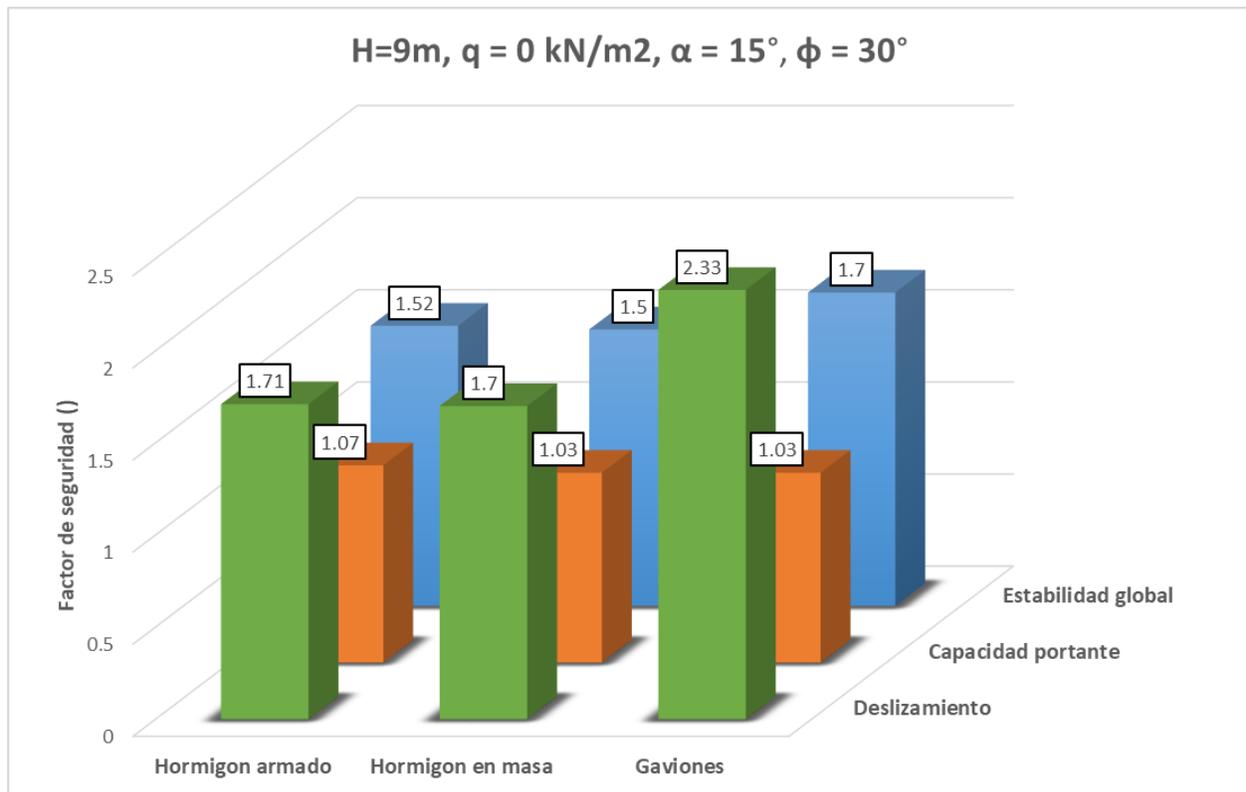


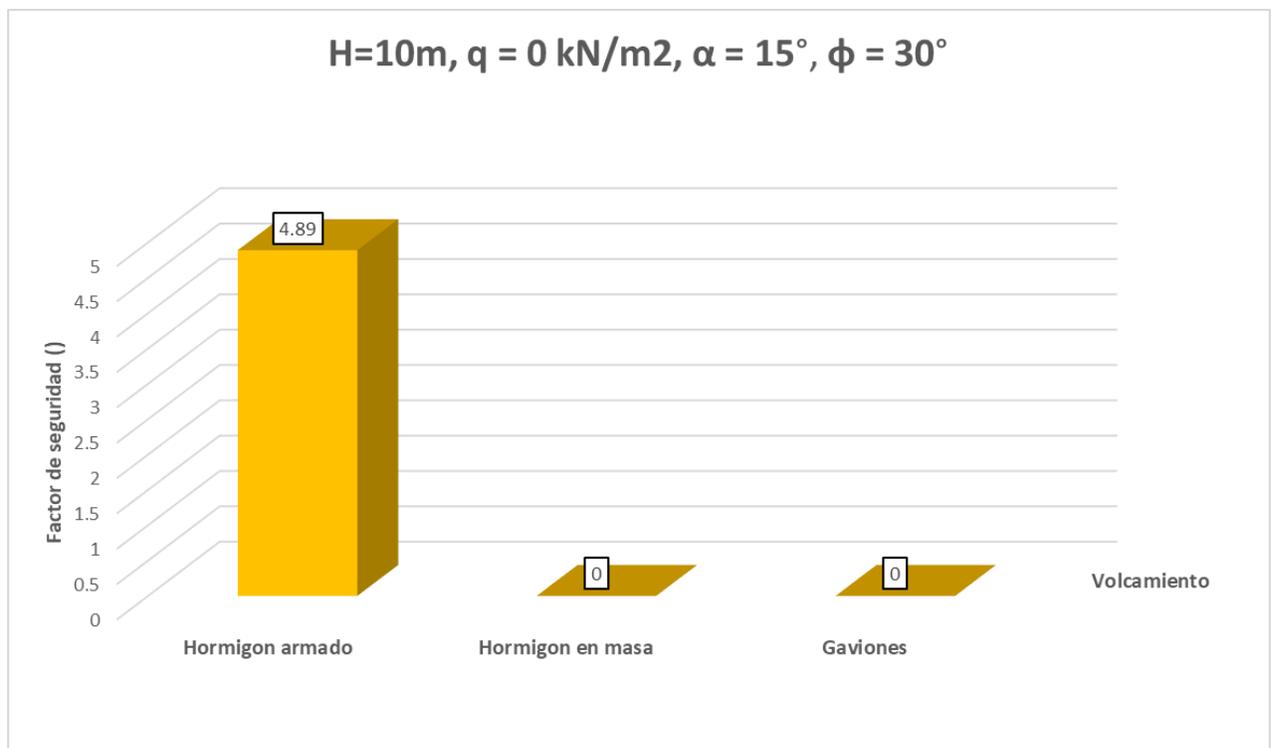
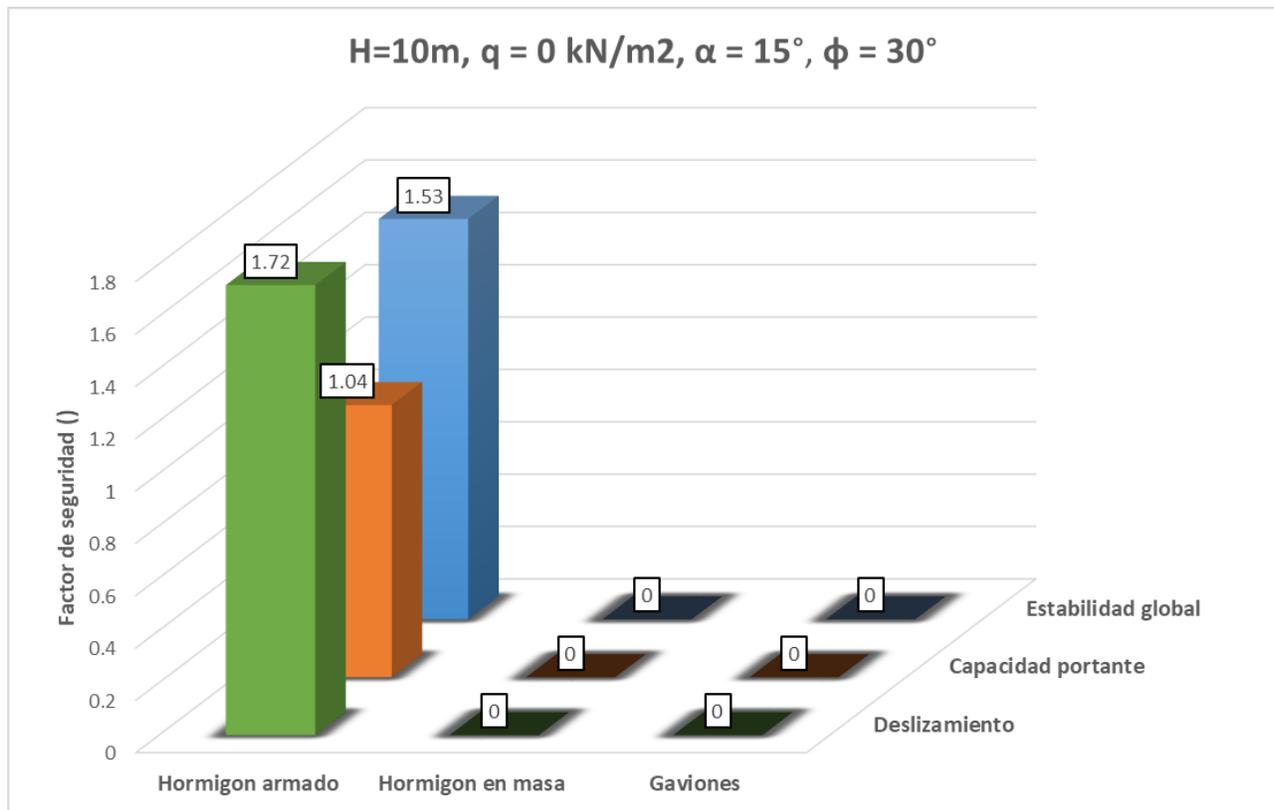


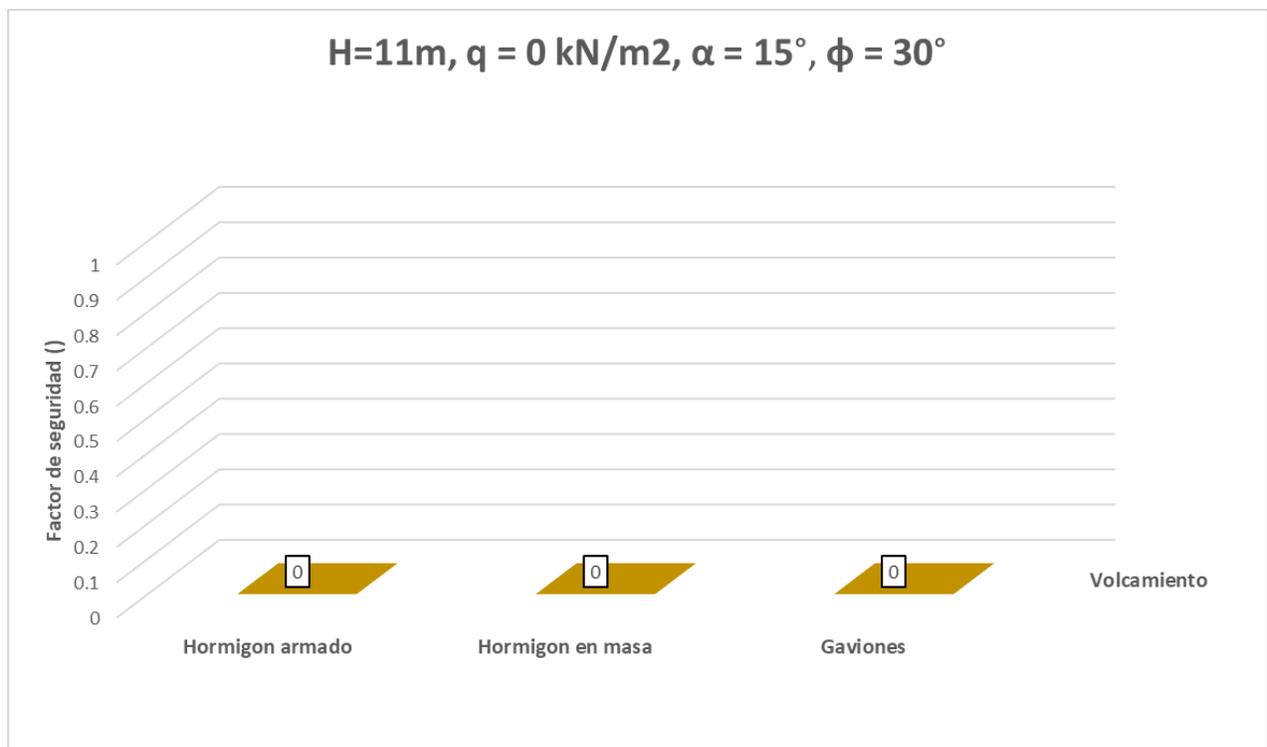
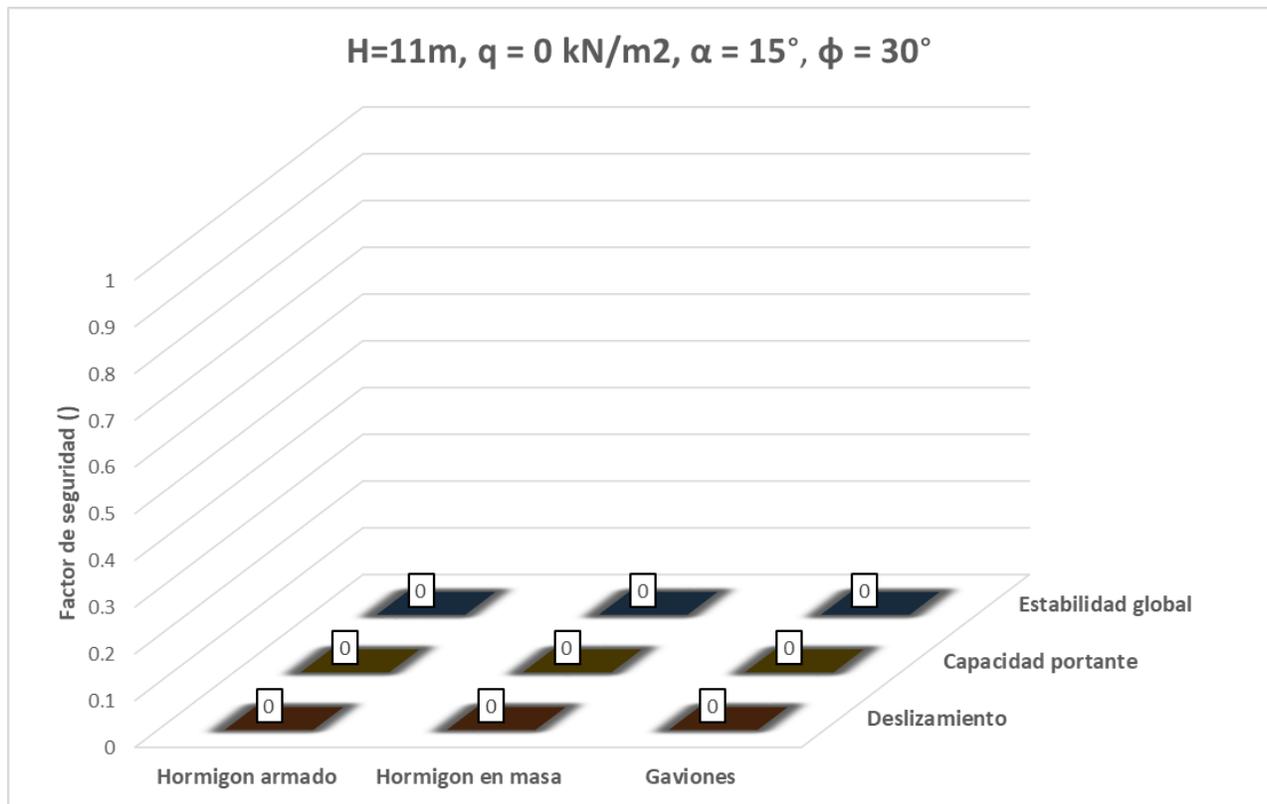


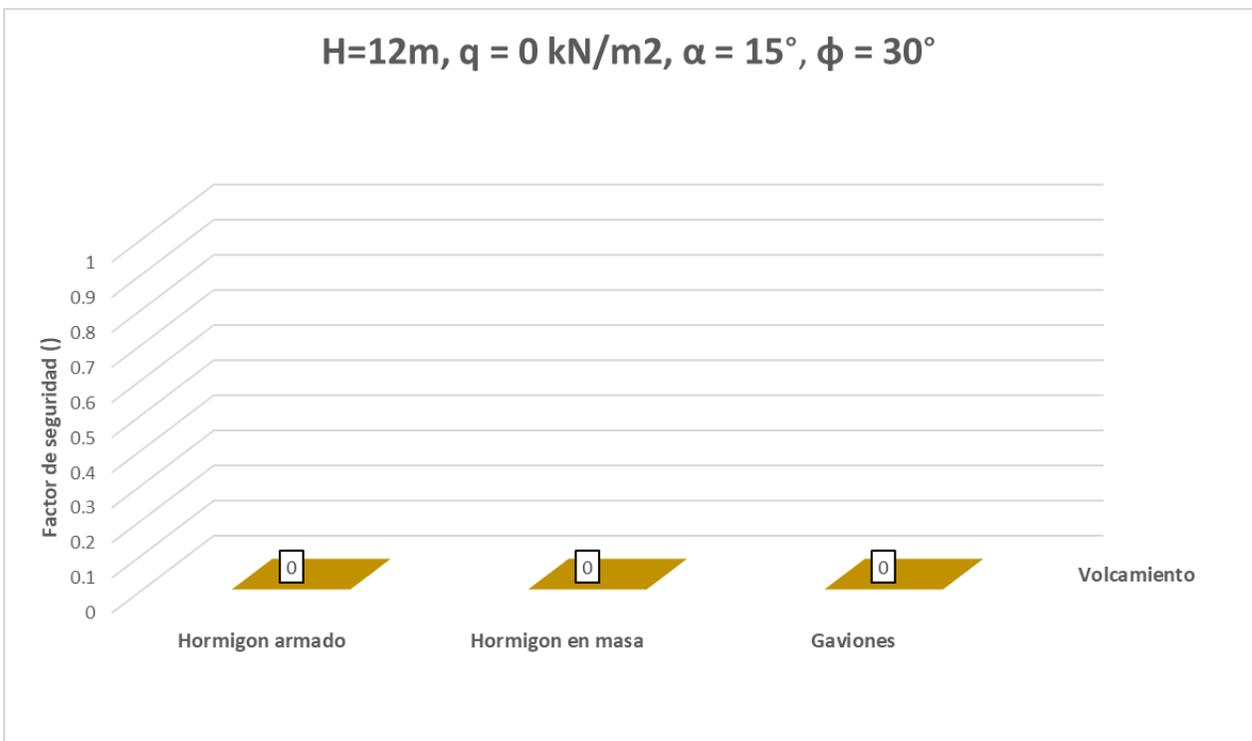
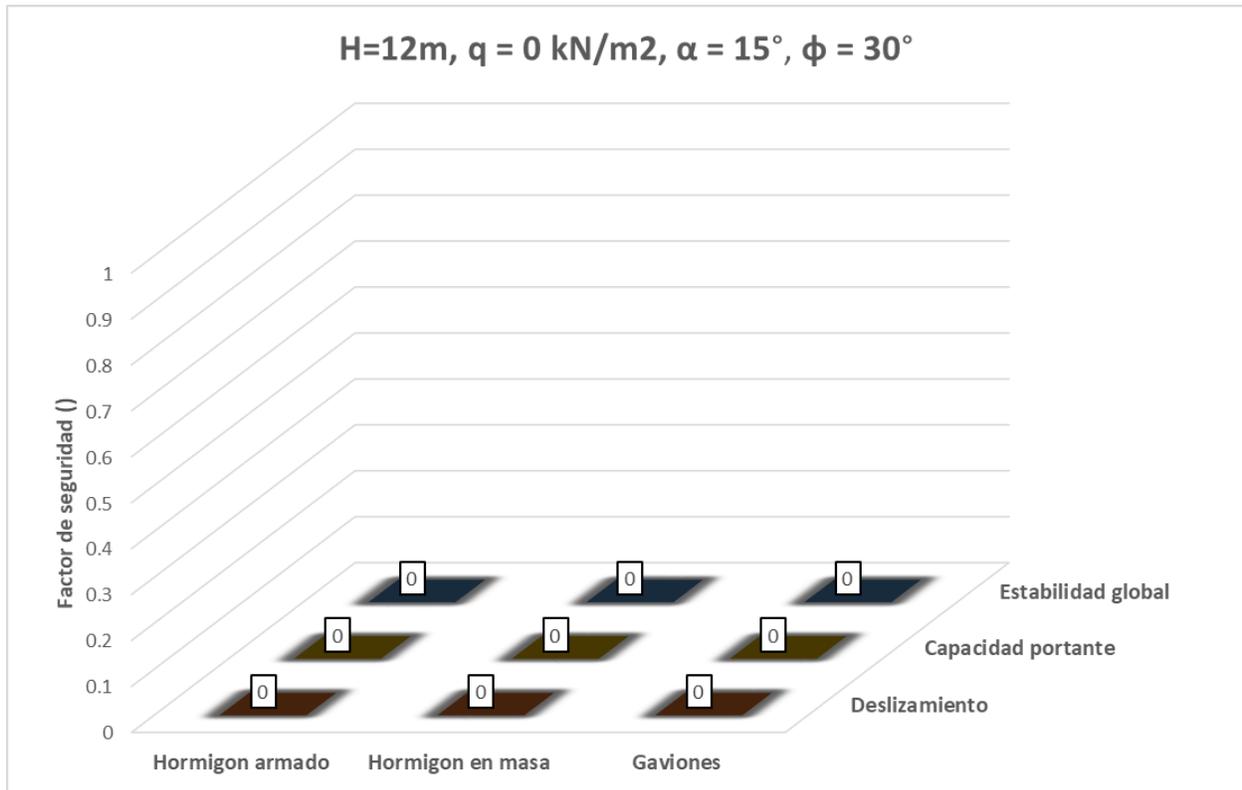


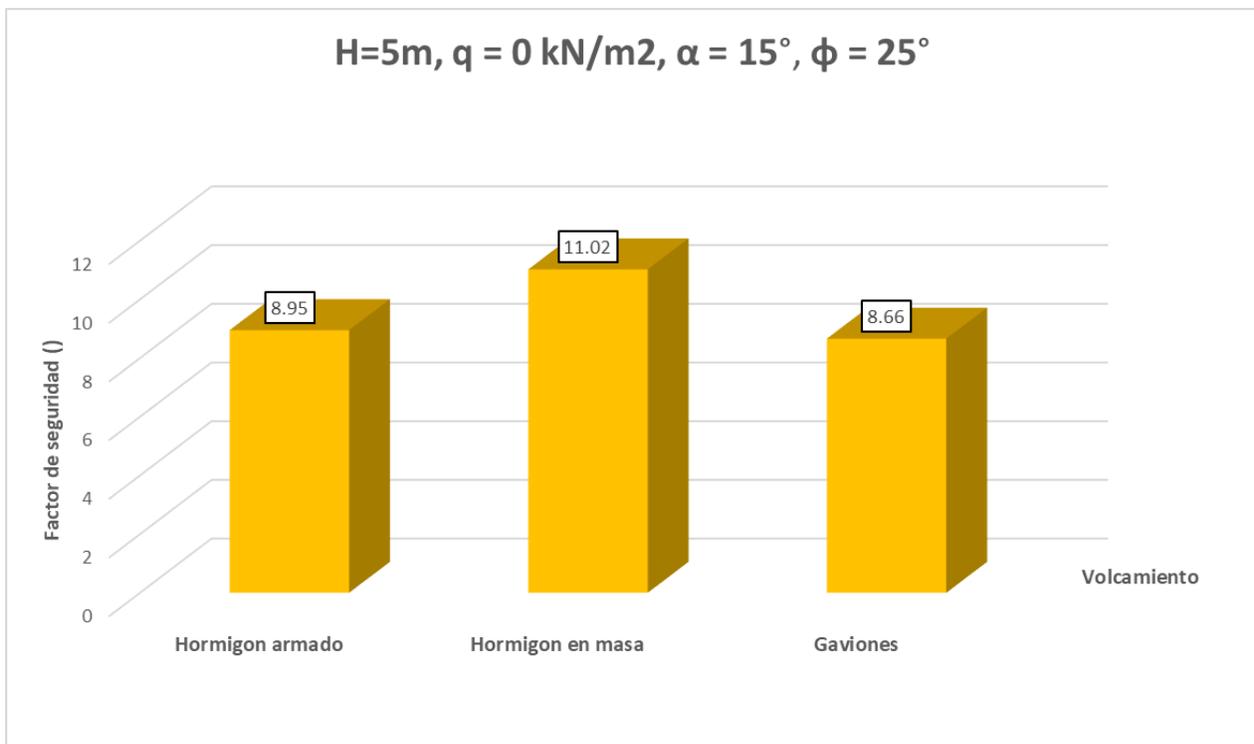
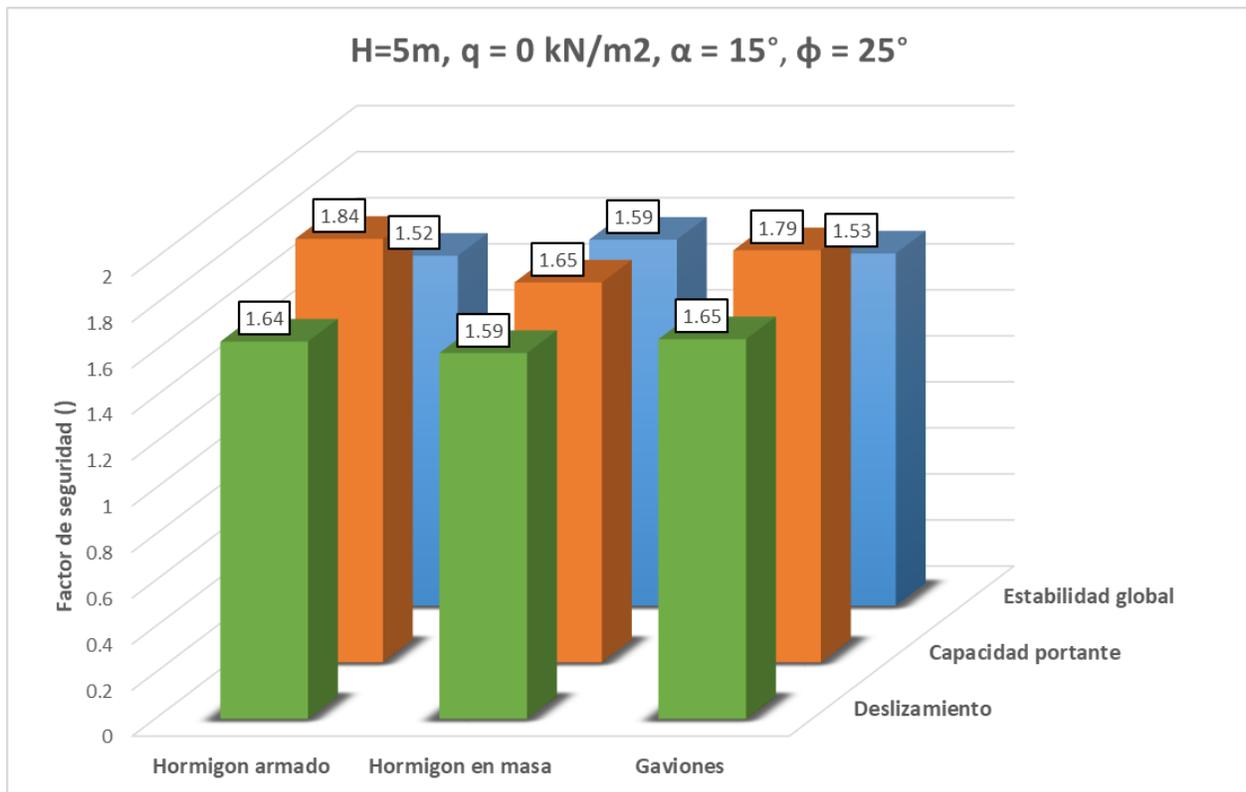


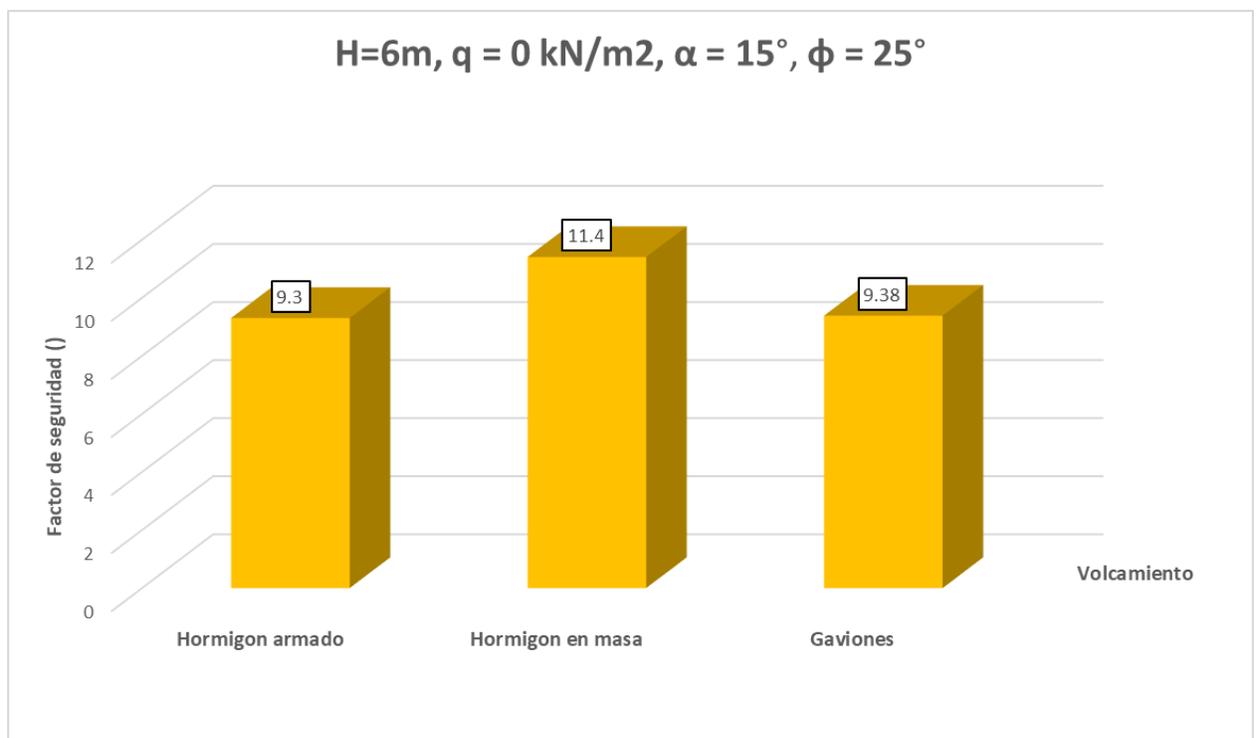
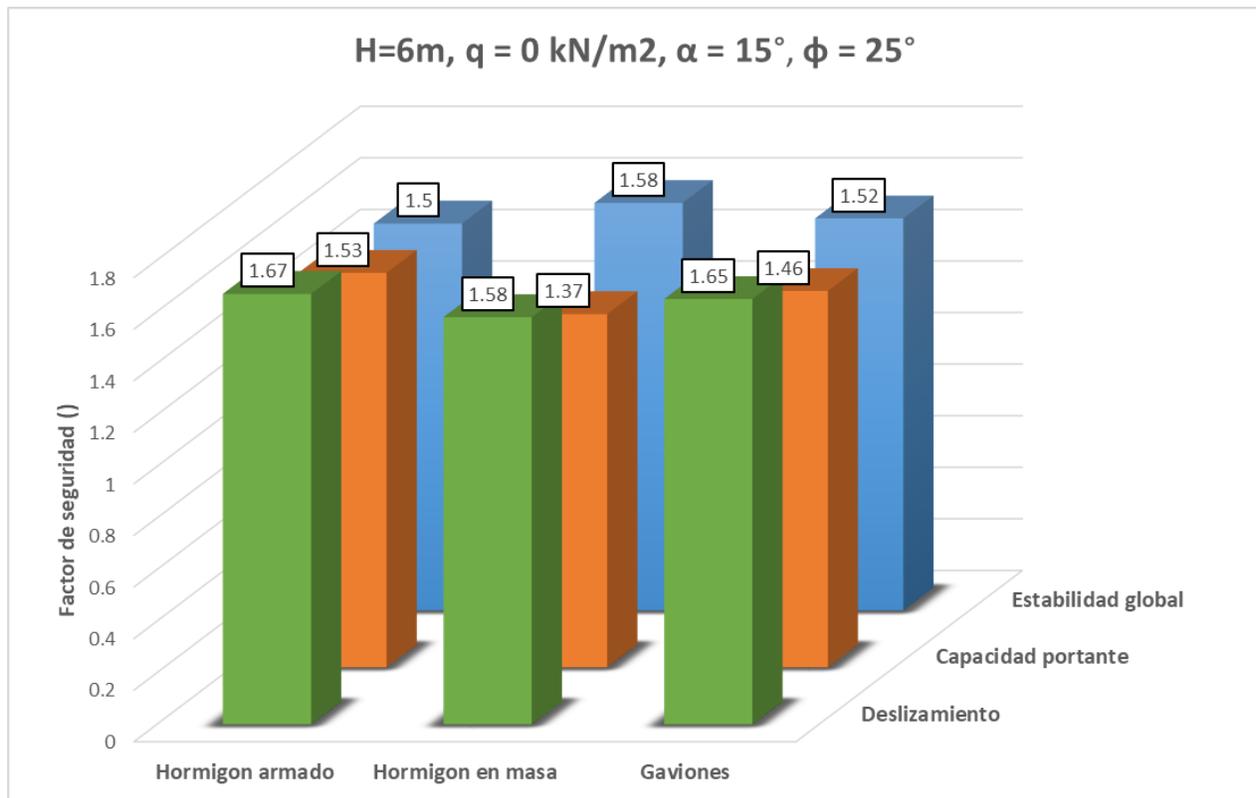


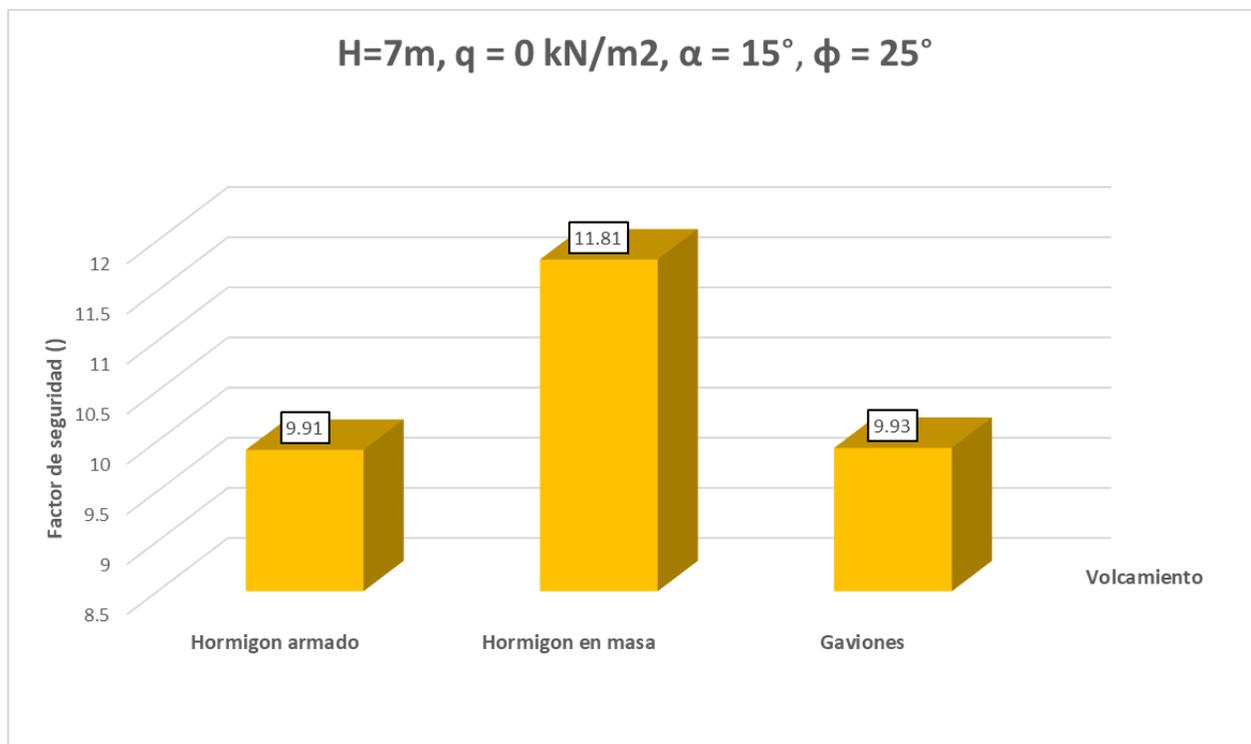
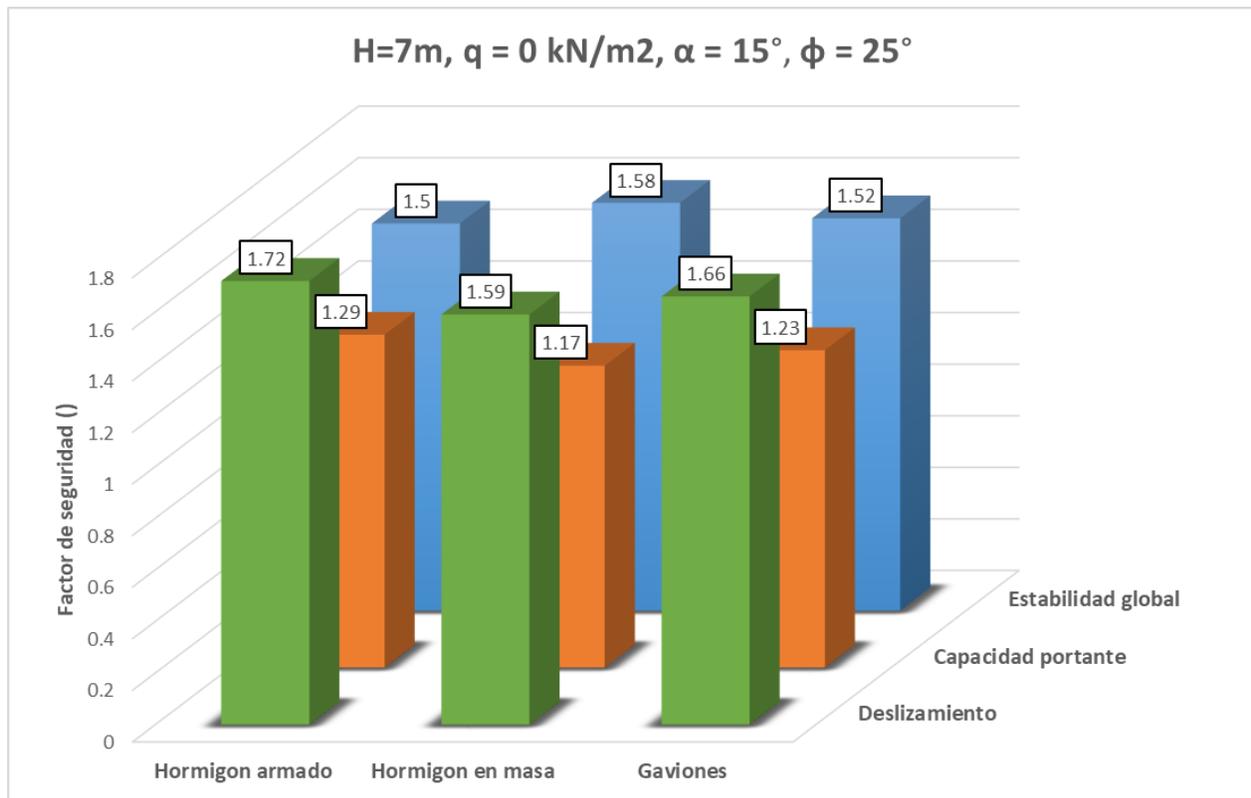


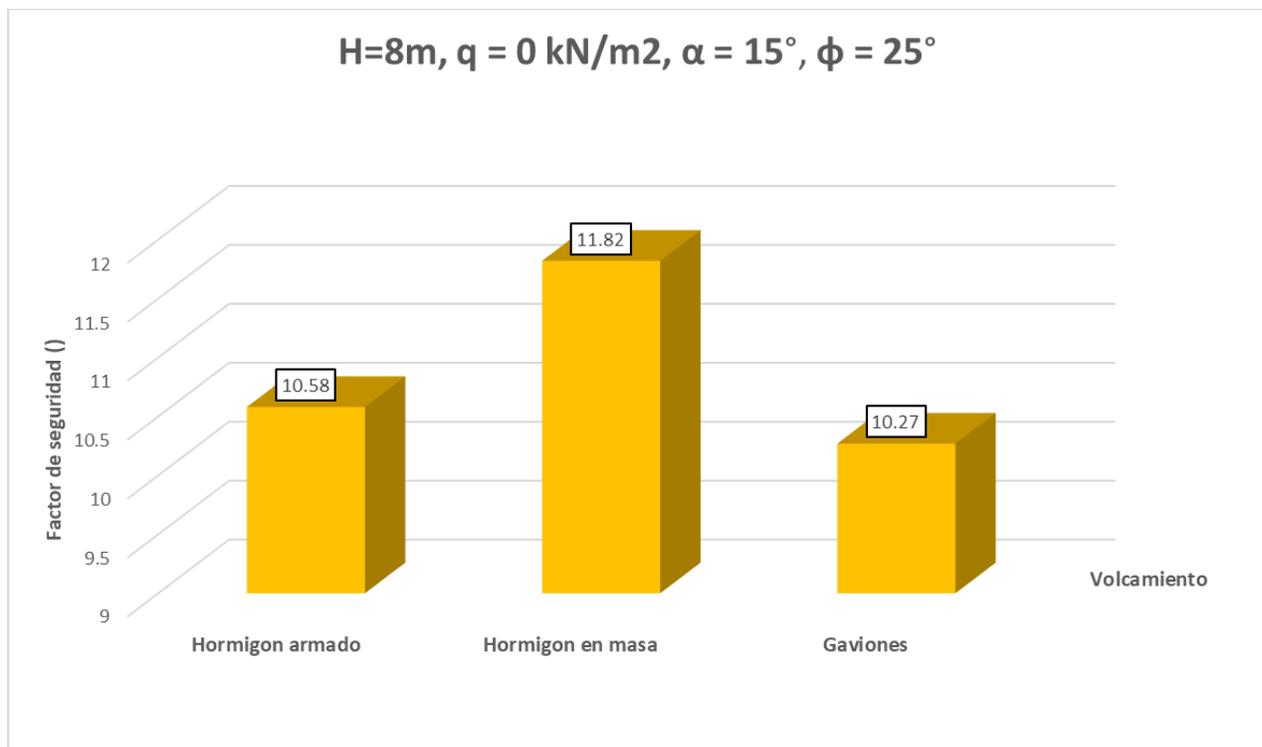
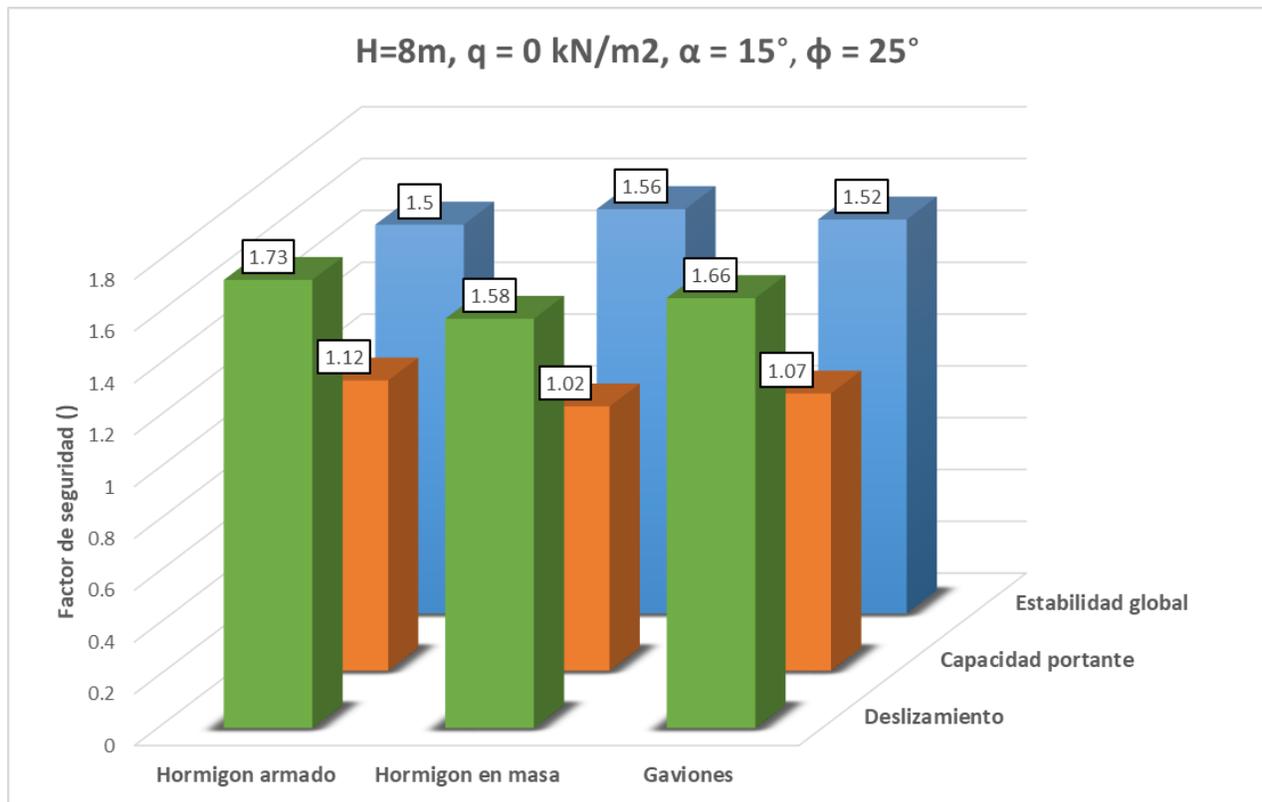


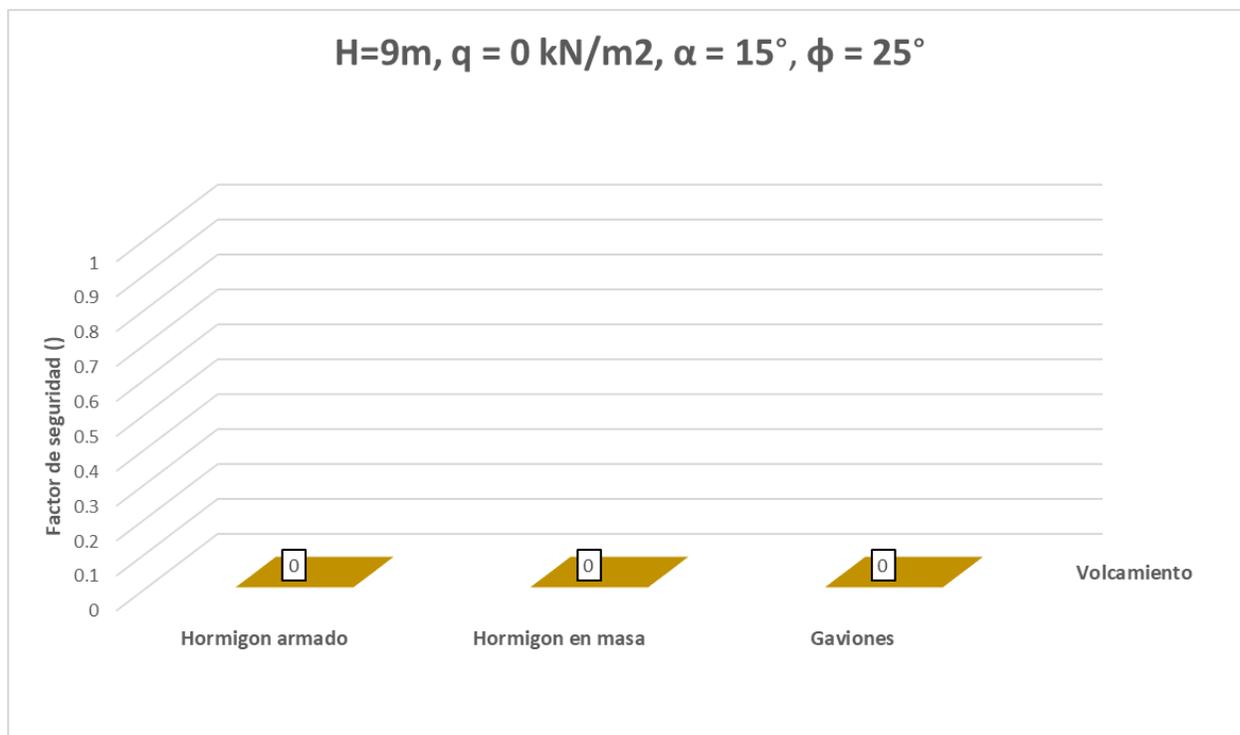
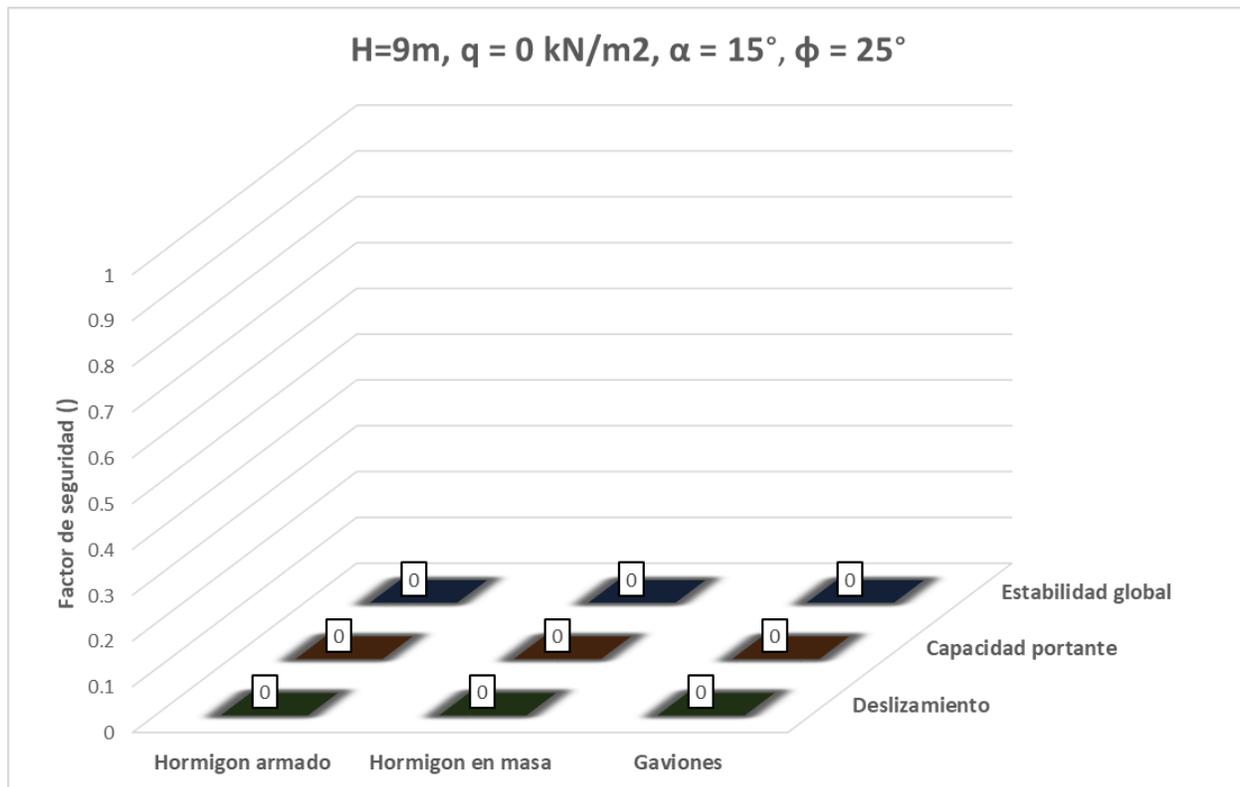


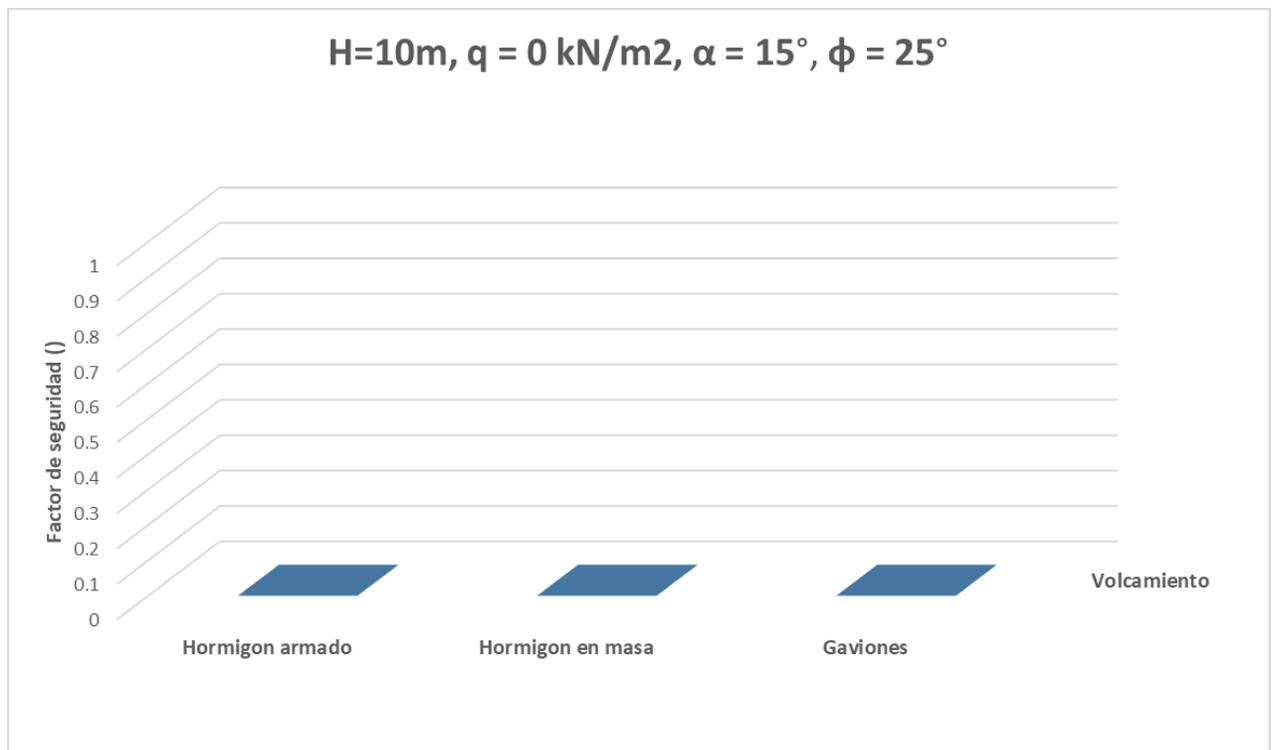
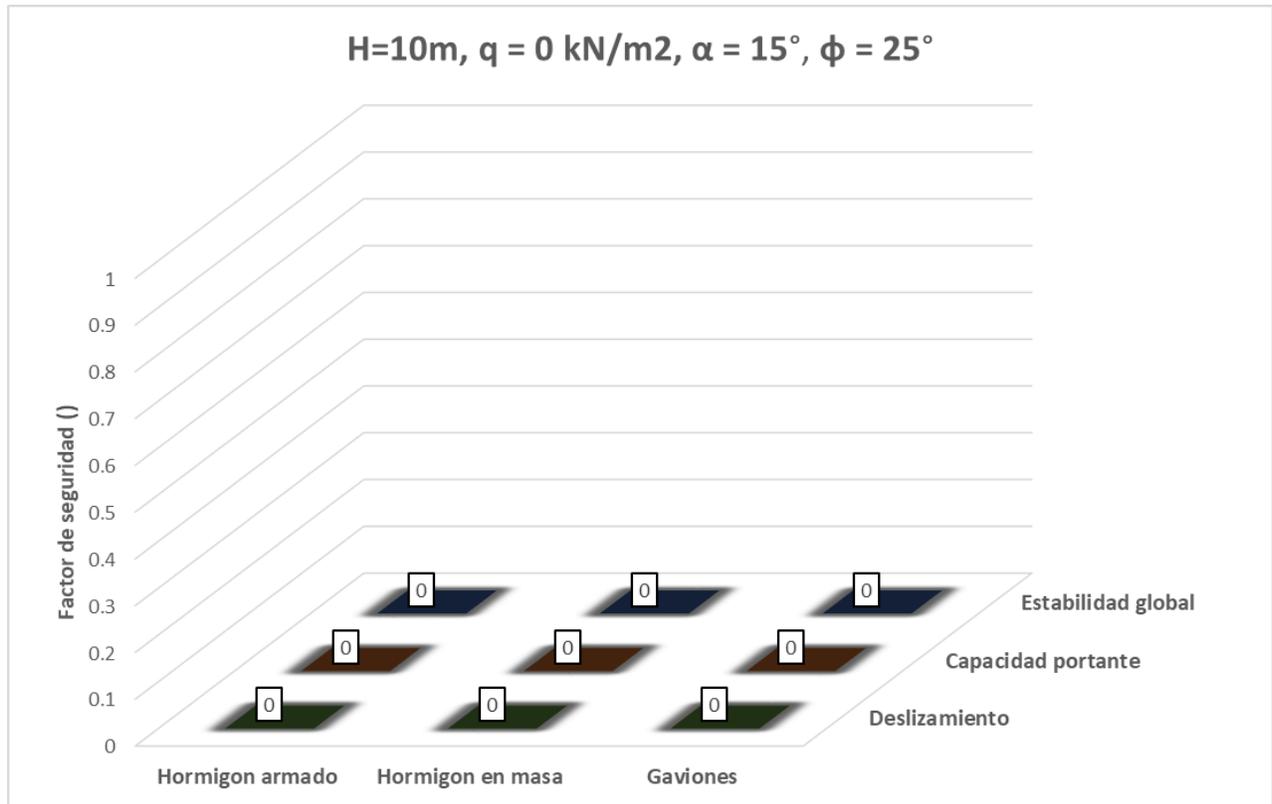


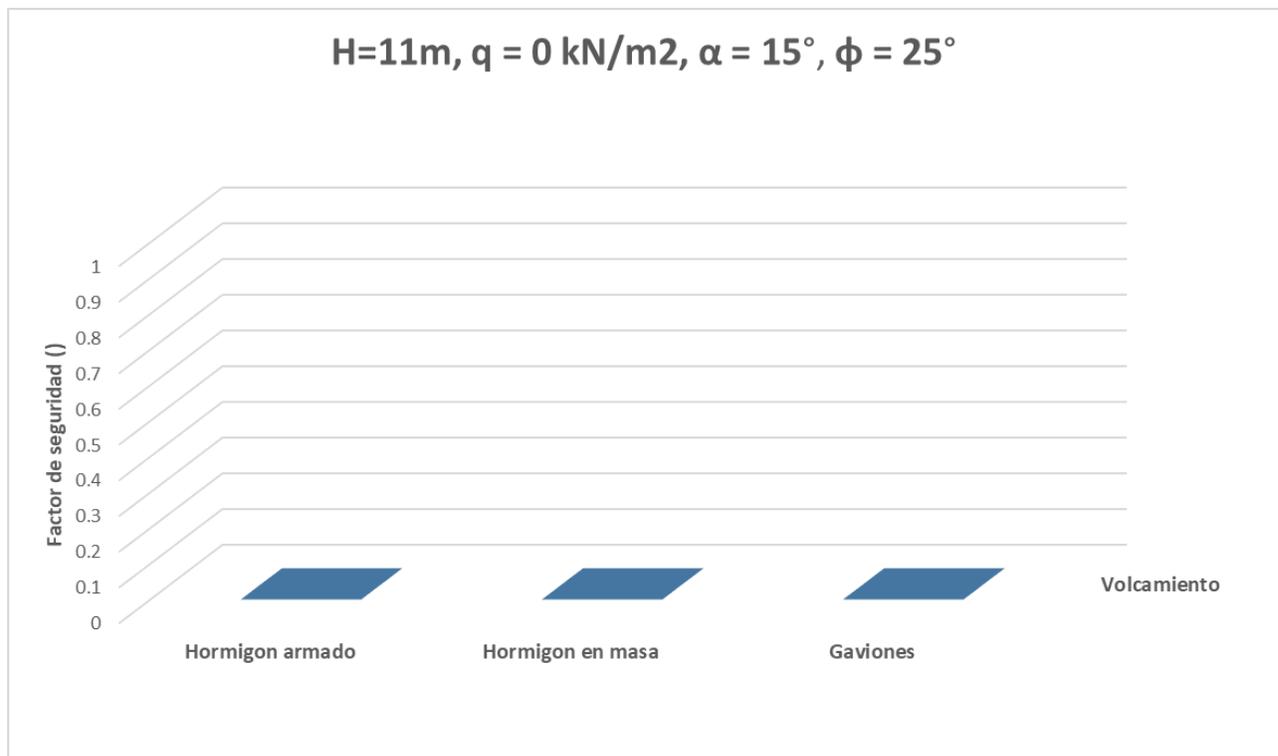
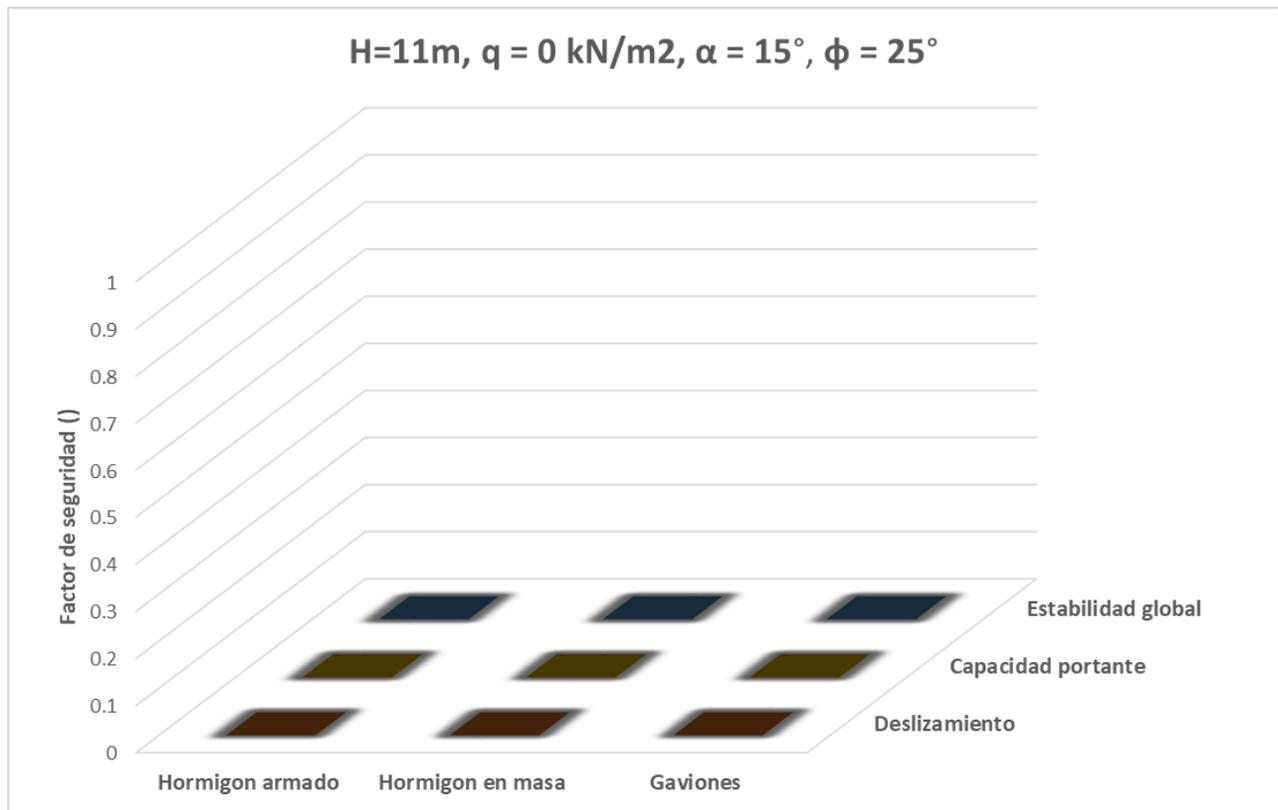


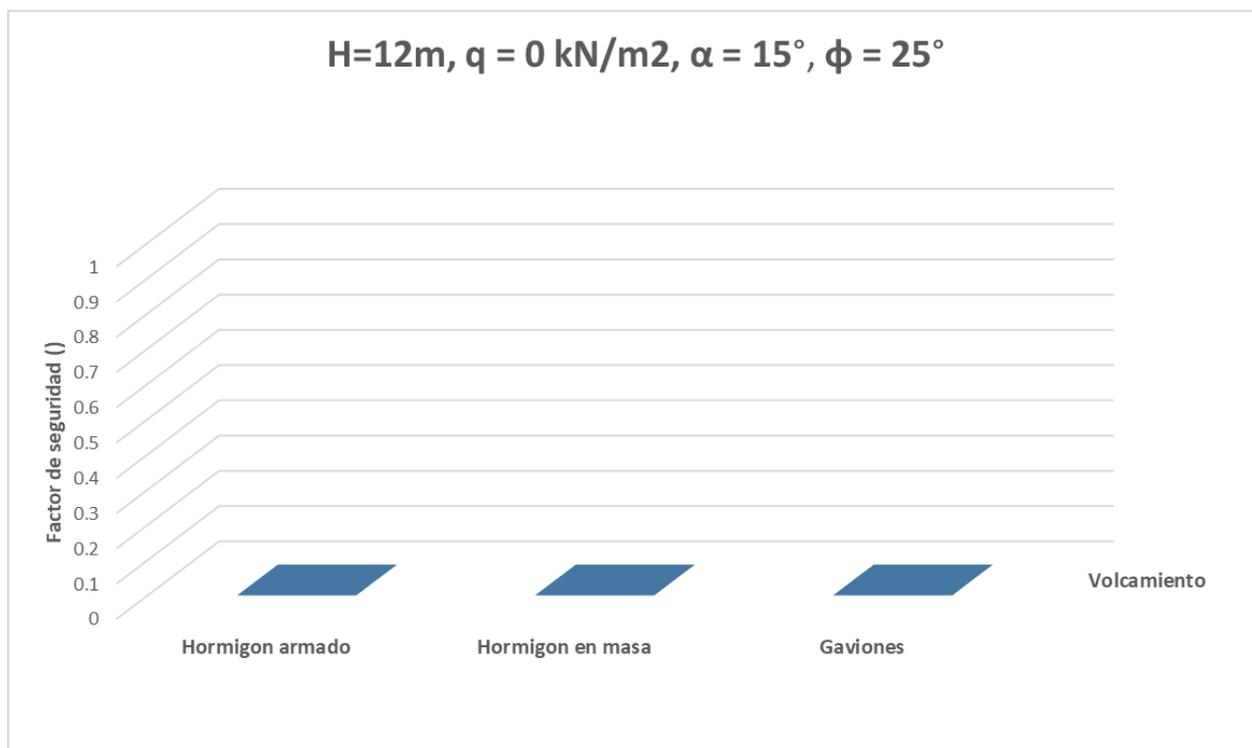
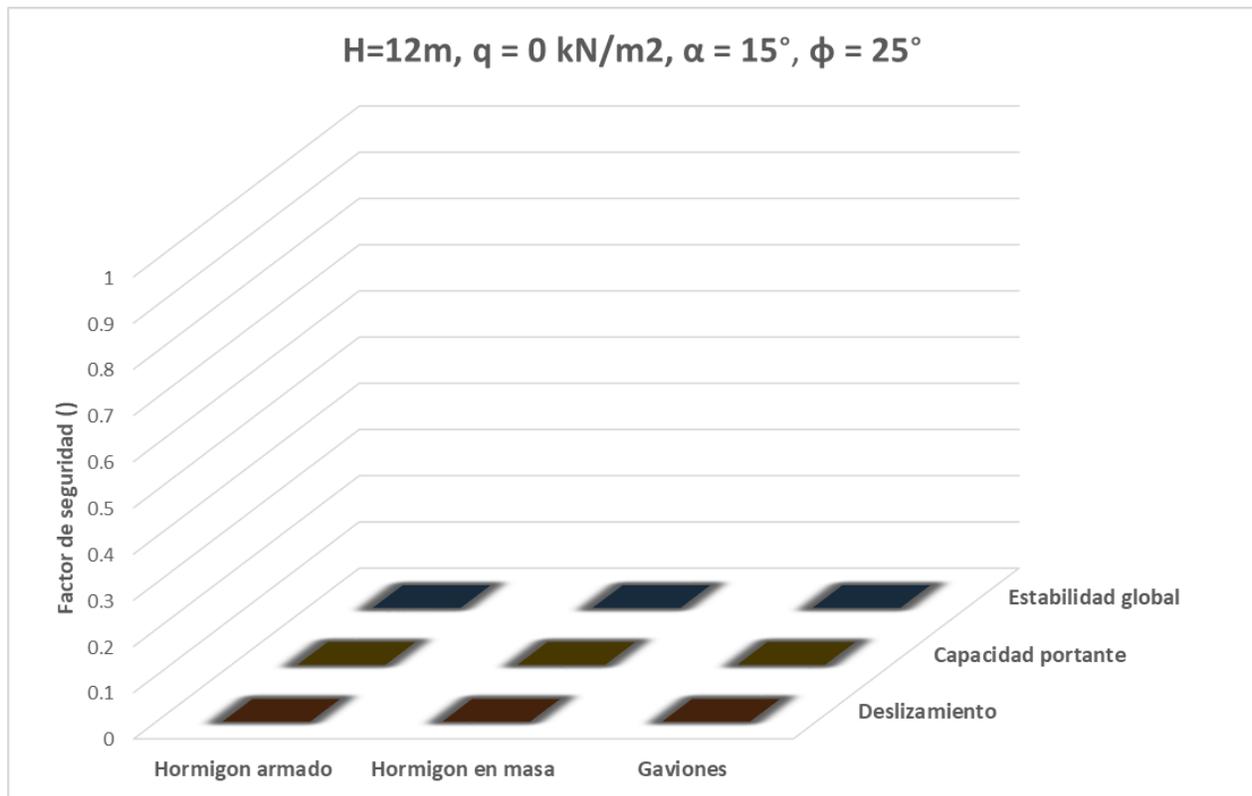






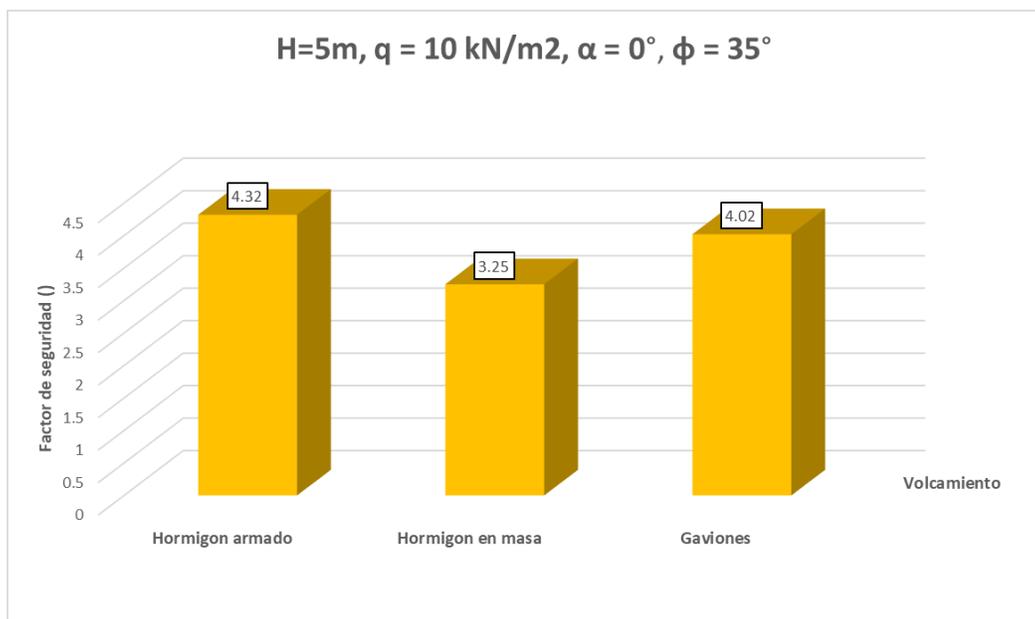
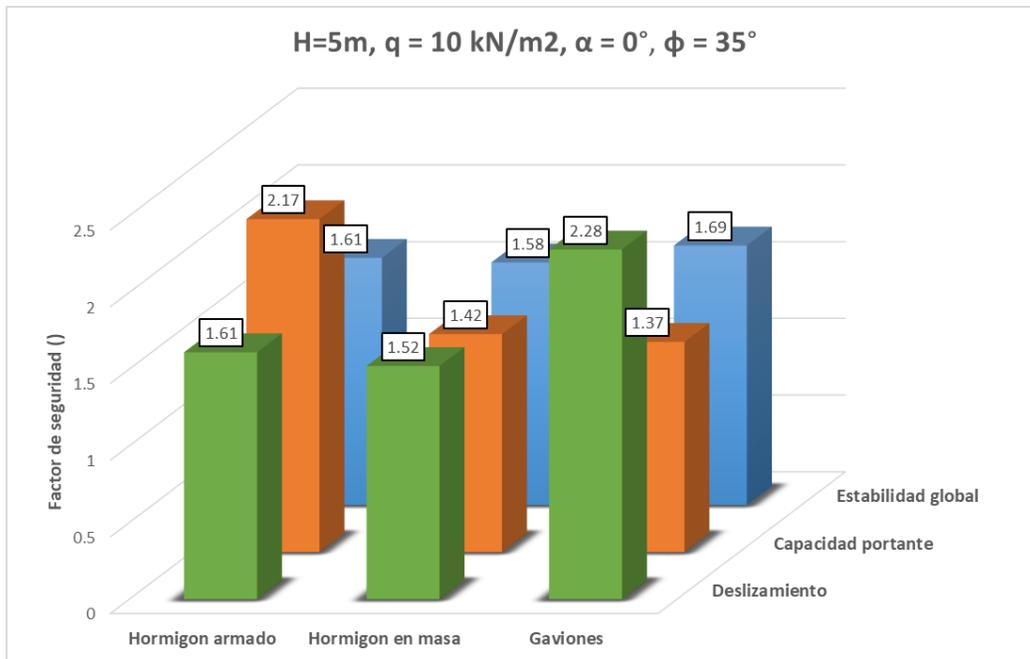


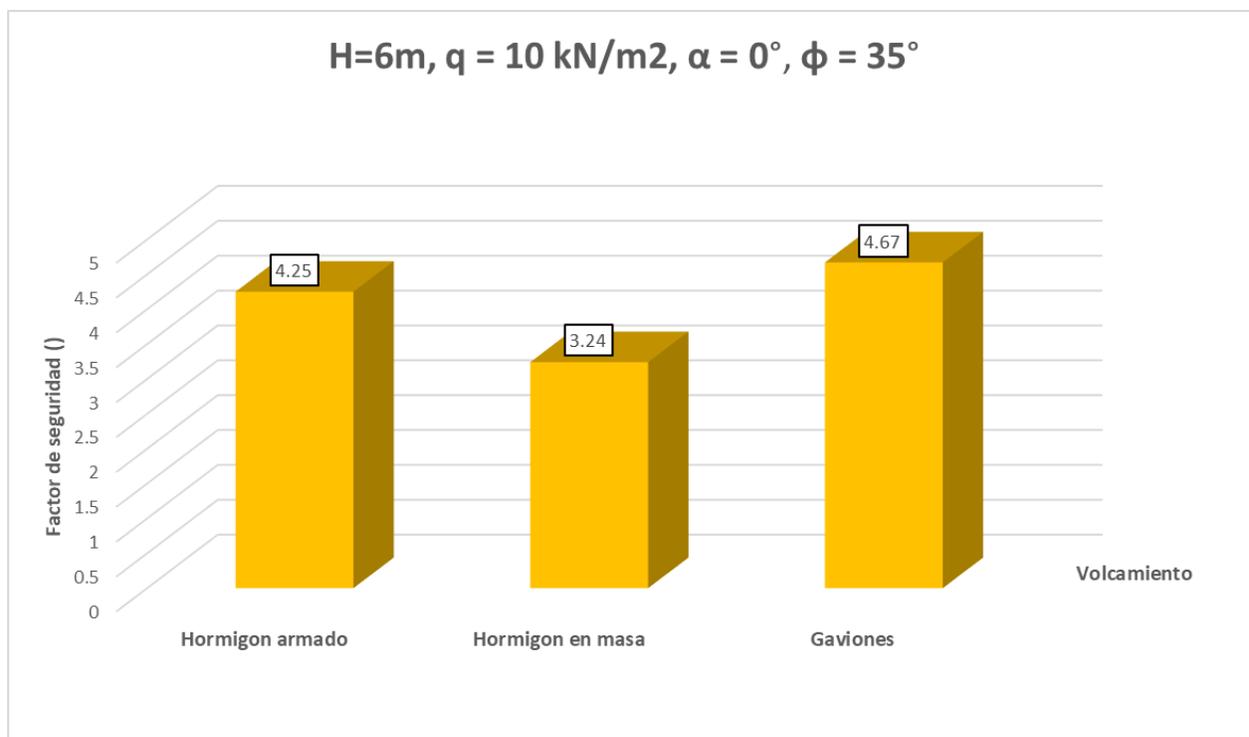
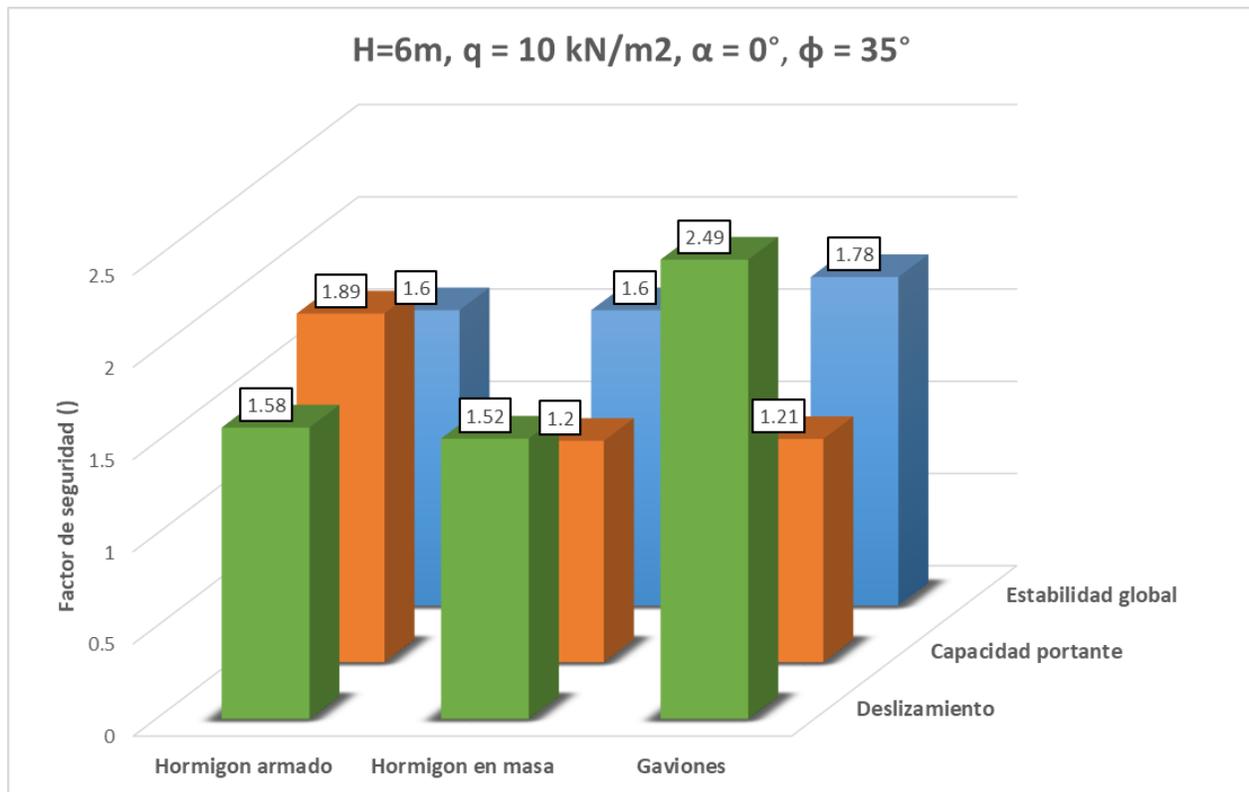


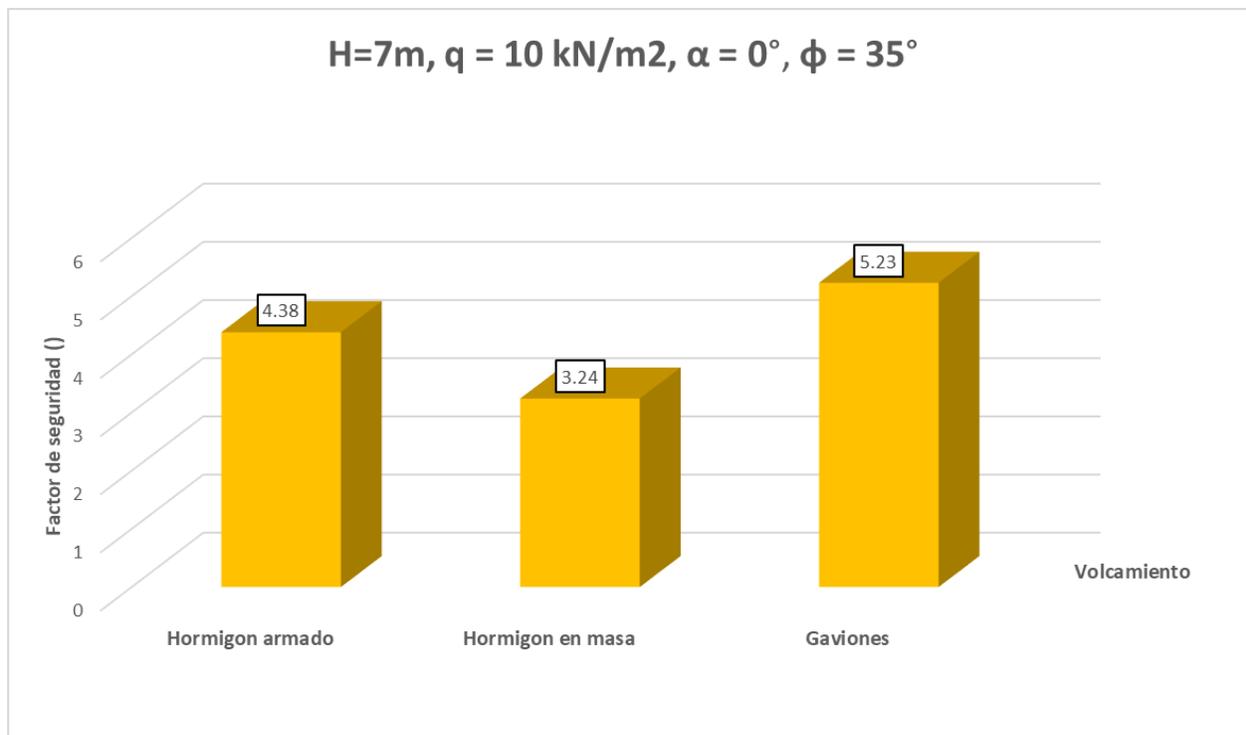
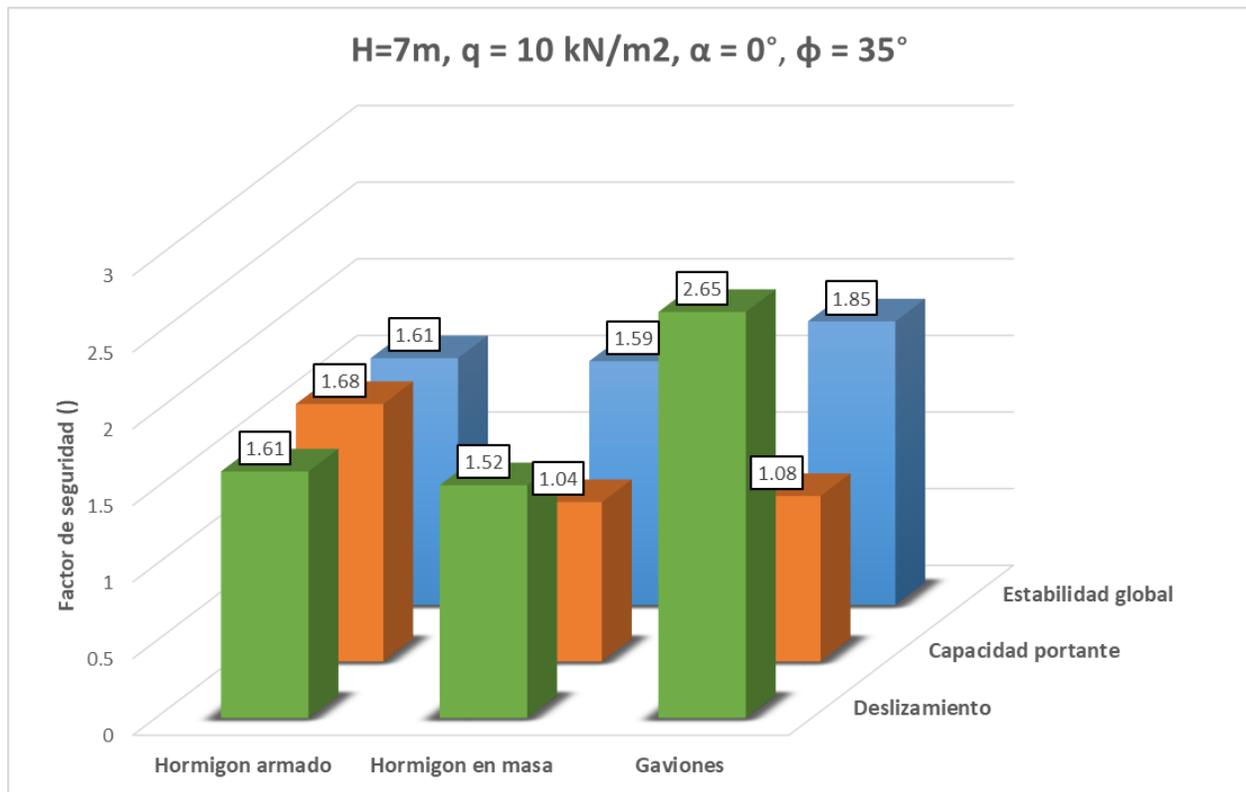


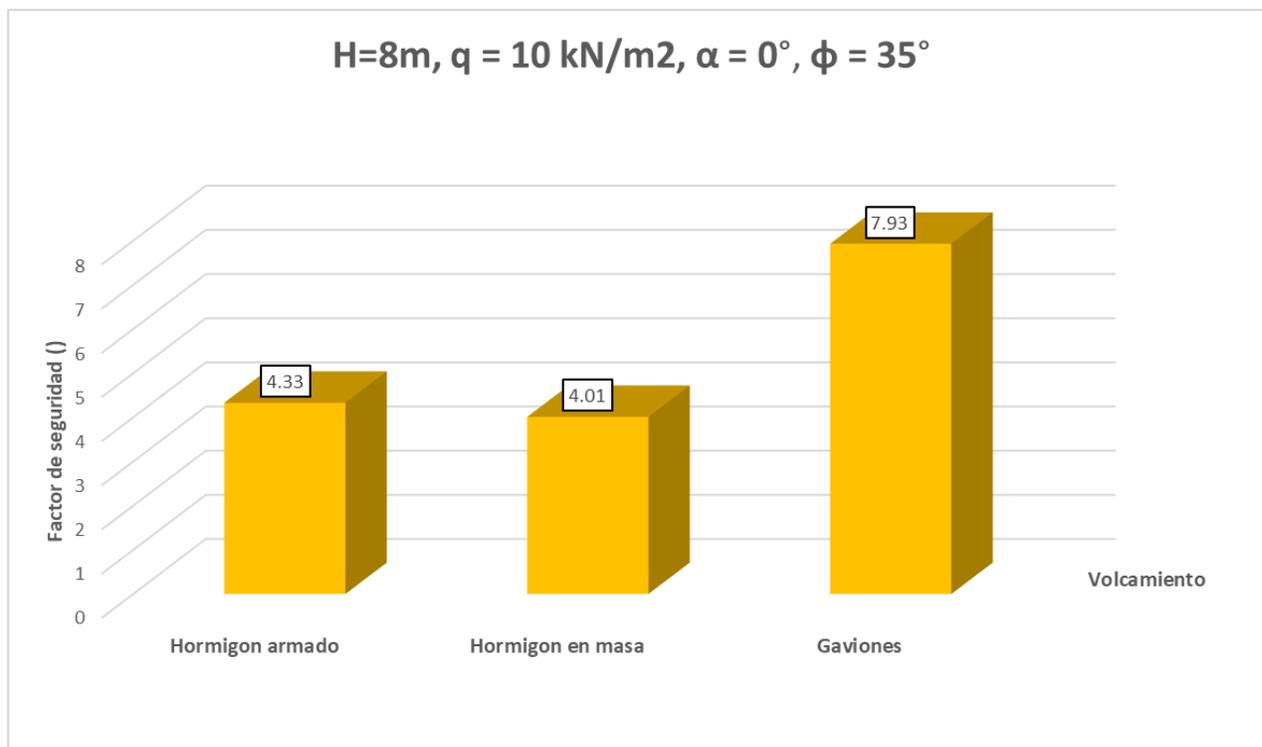
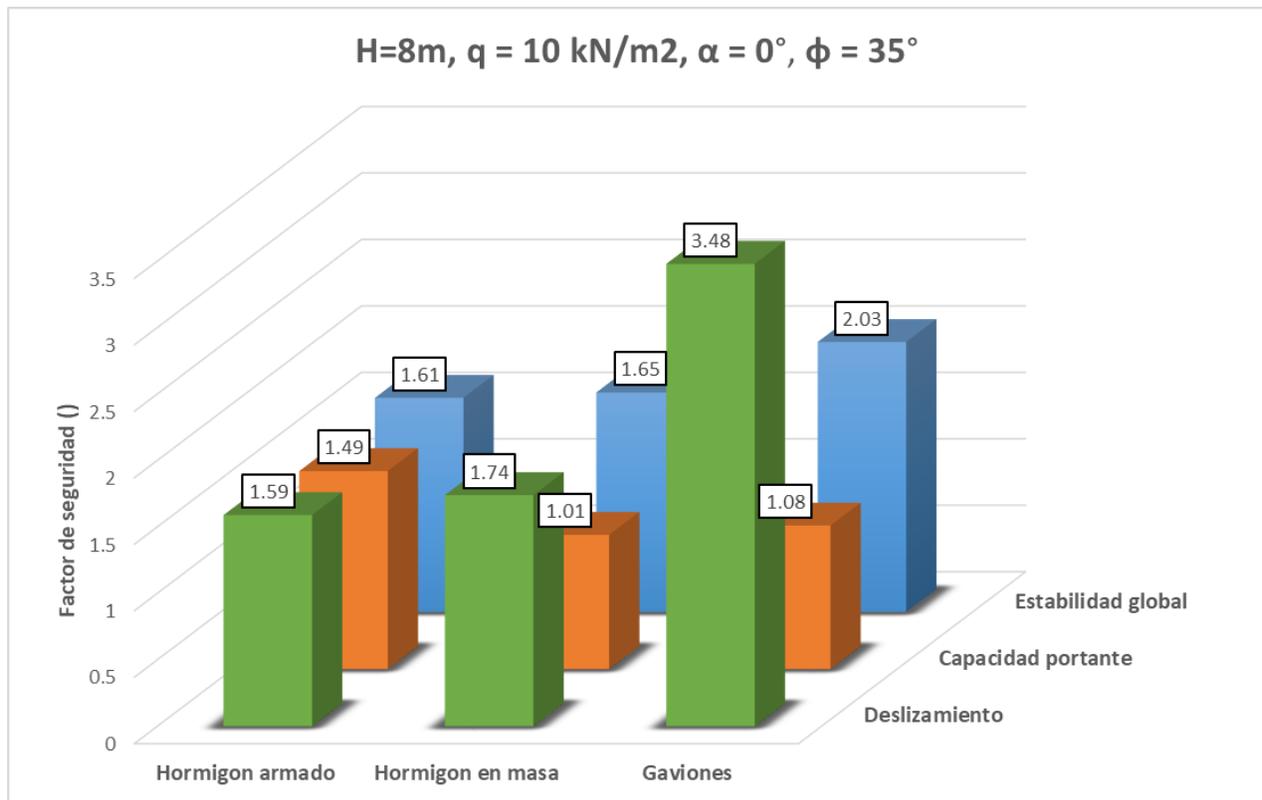
Para $q = 0$ (kN/m²), $\alpha = 15^\circ$ y $\phi = 20^\circ$ con las alturas de 5m a 12m no se tiene solución como los gráficos iguales a 0 mostrados anteriormente.

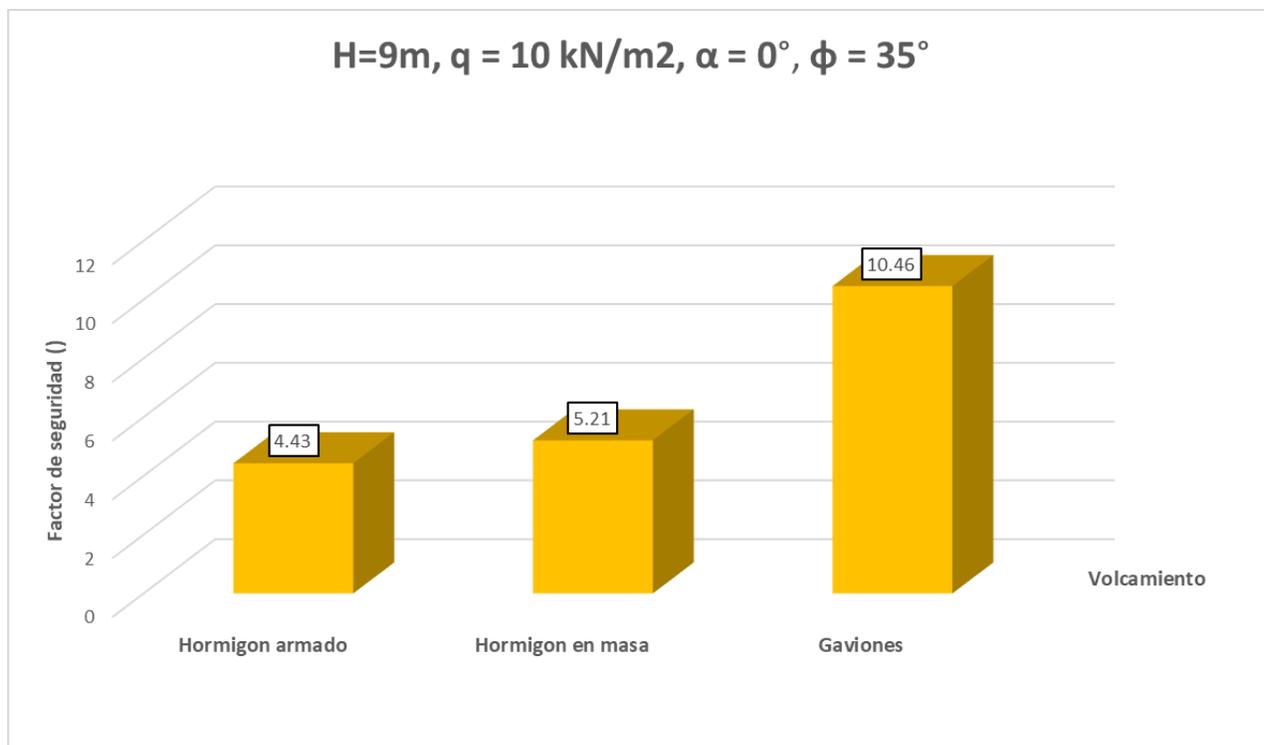
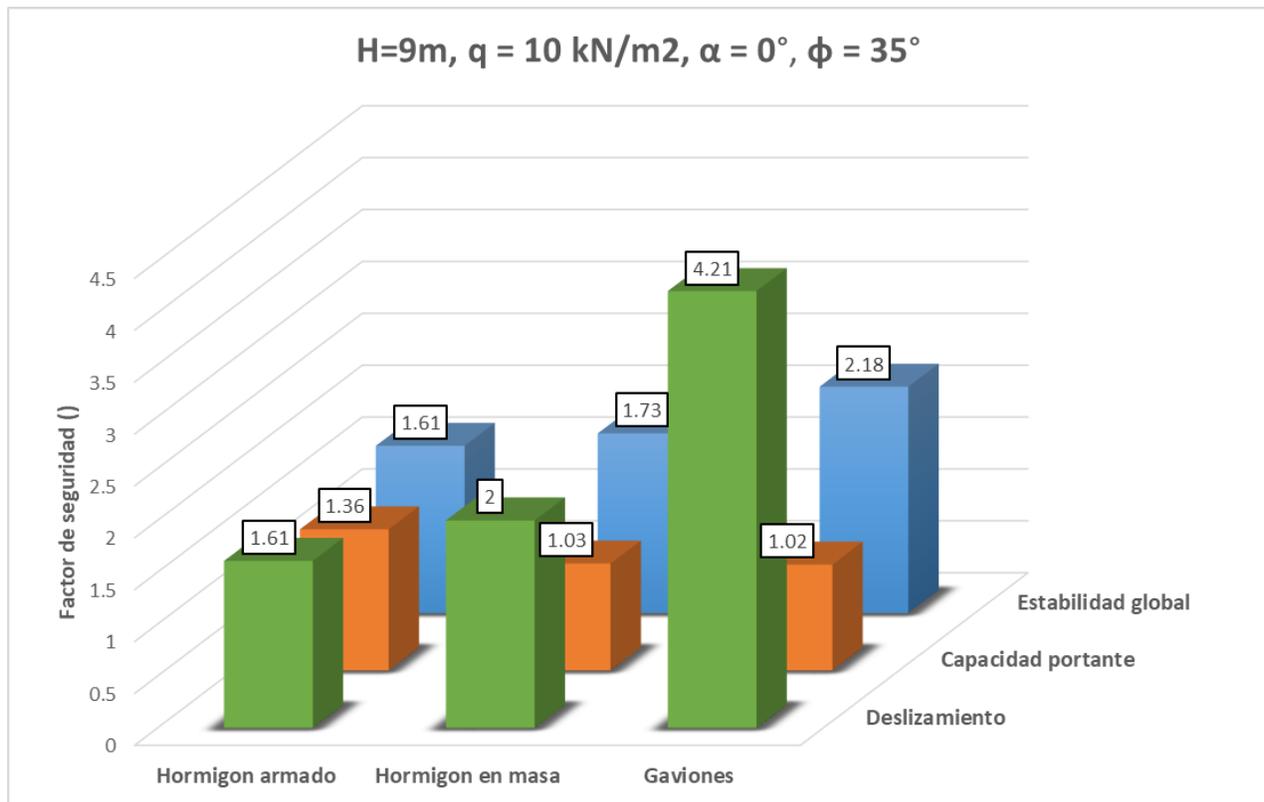
Para $q = 0$ (kN/m²), $\alpha = 30^\circ$ y $\phi = 35^\circ, 30^\circ, 25^\circ$ y 20° con las alturas de 5m a 12m no se tiene solución.

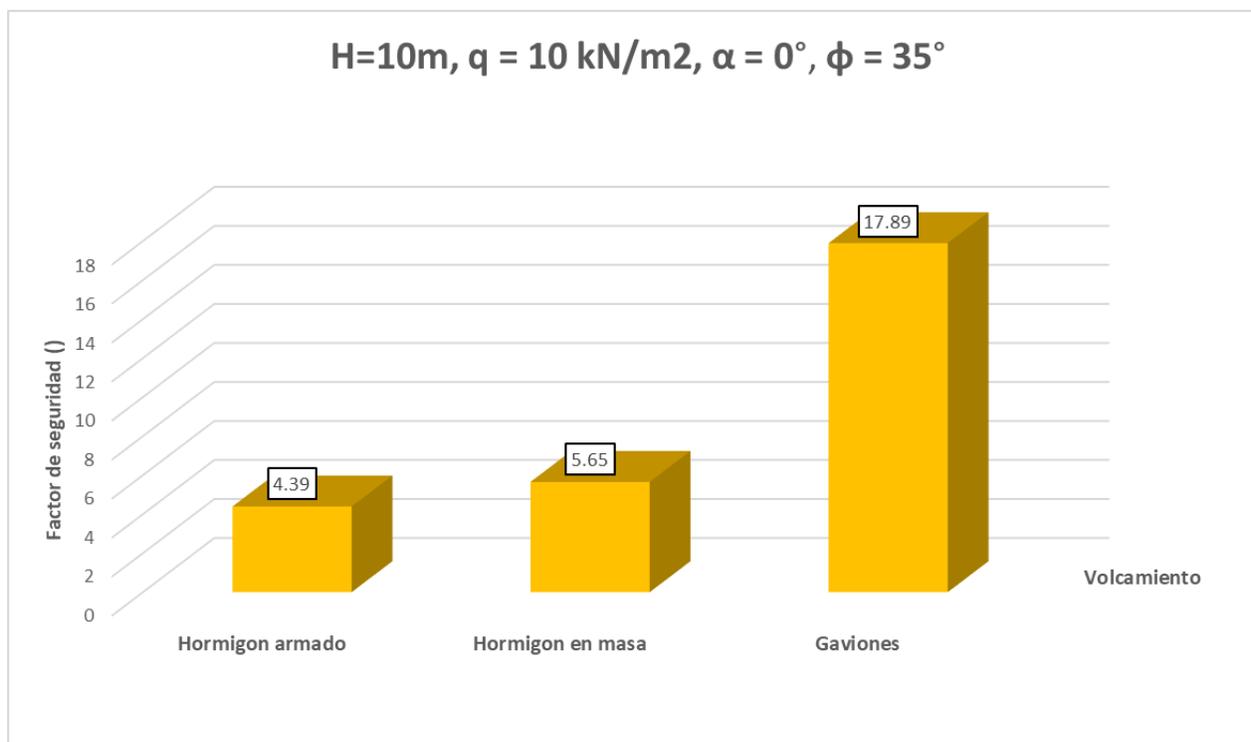
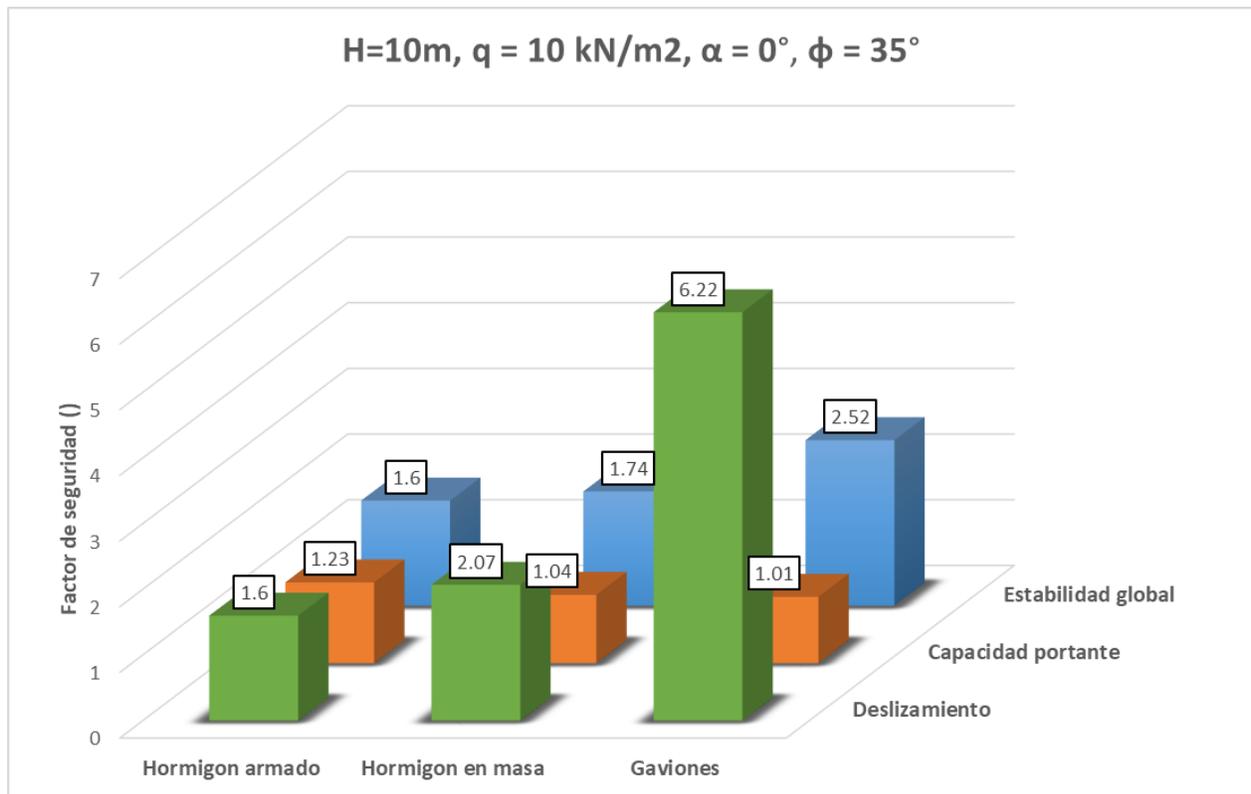


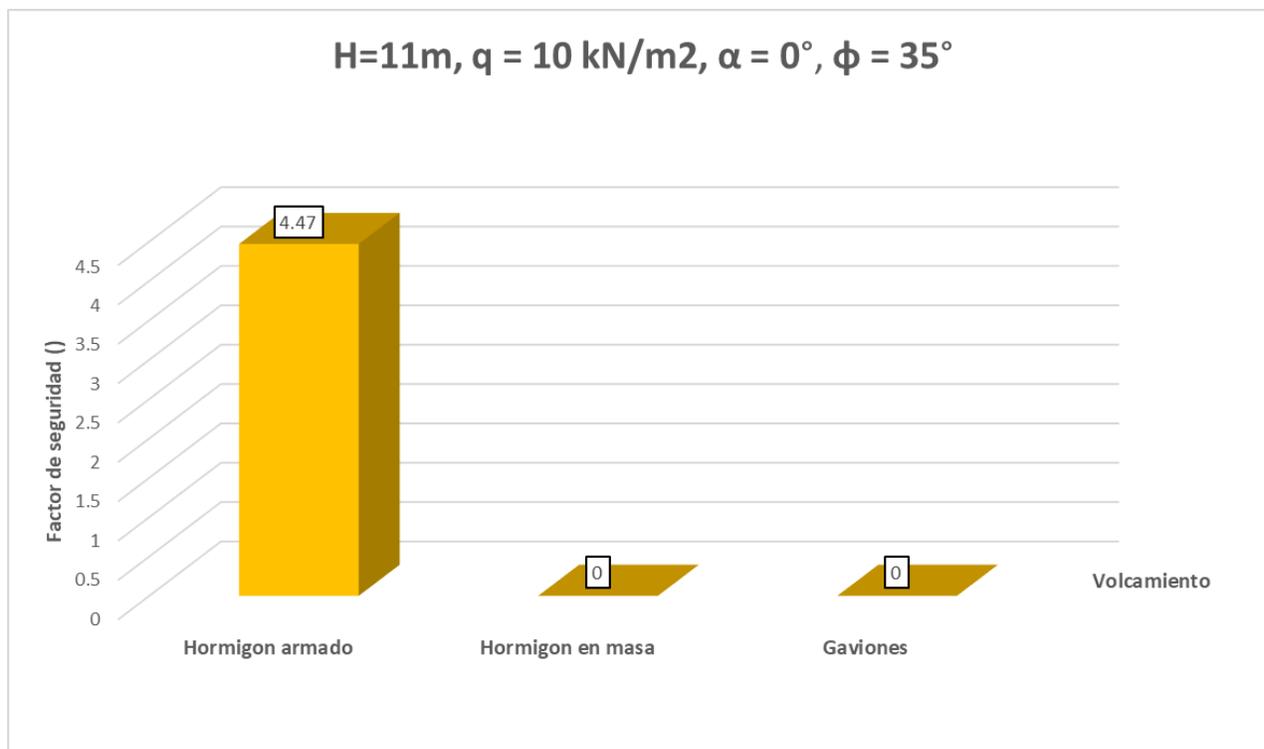
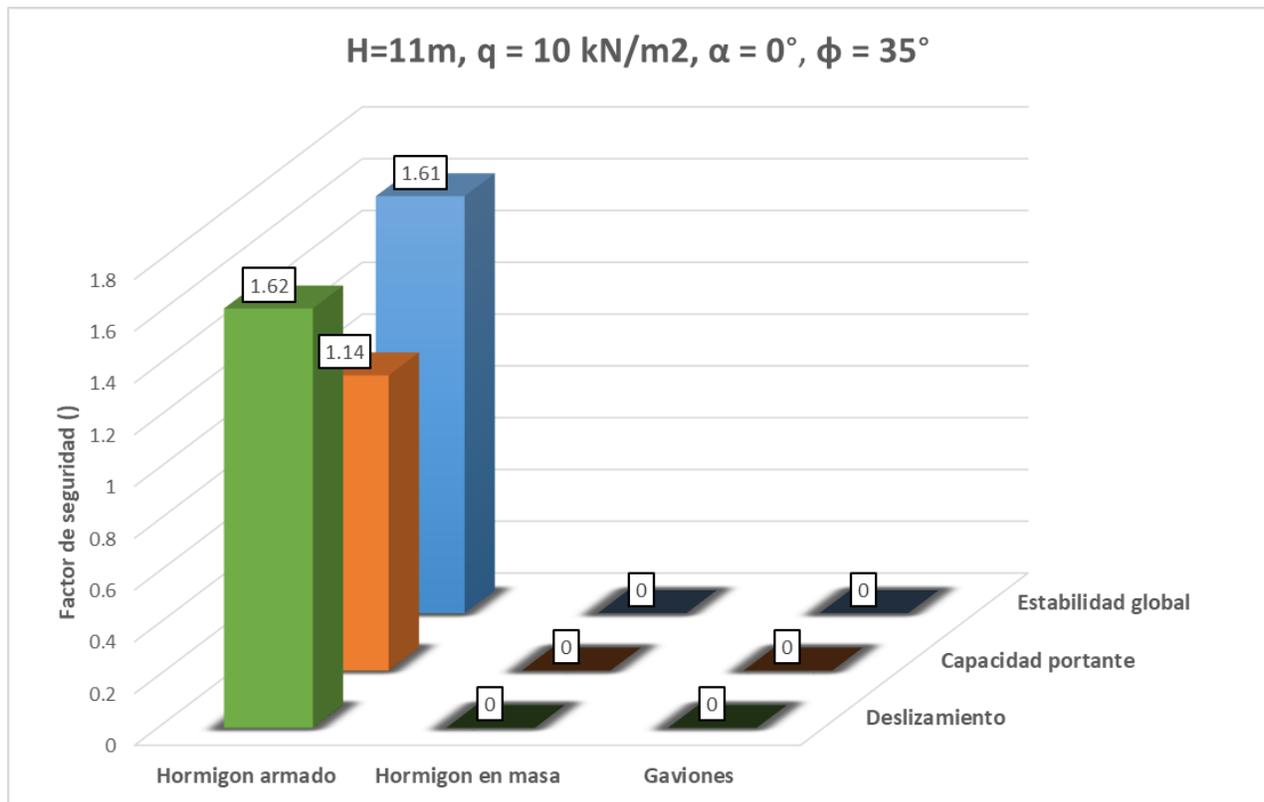


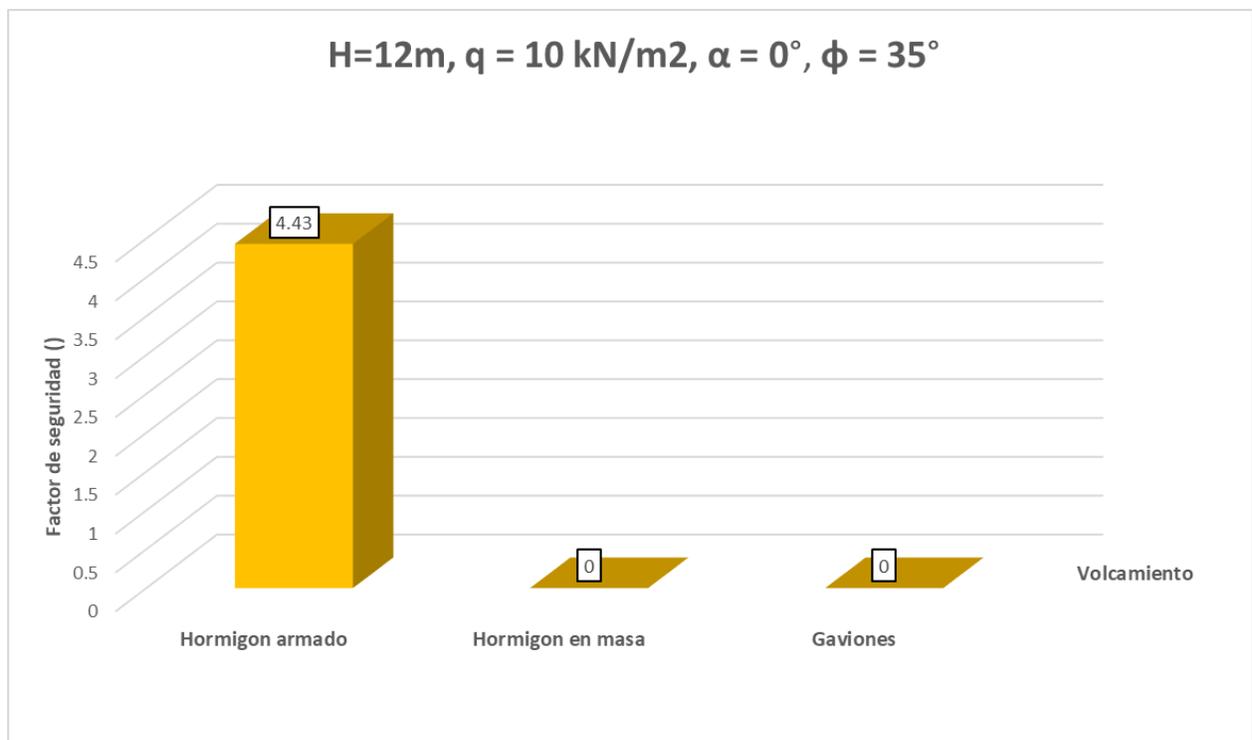
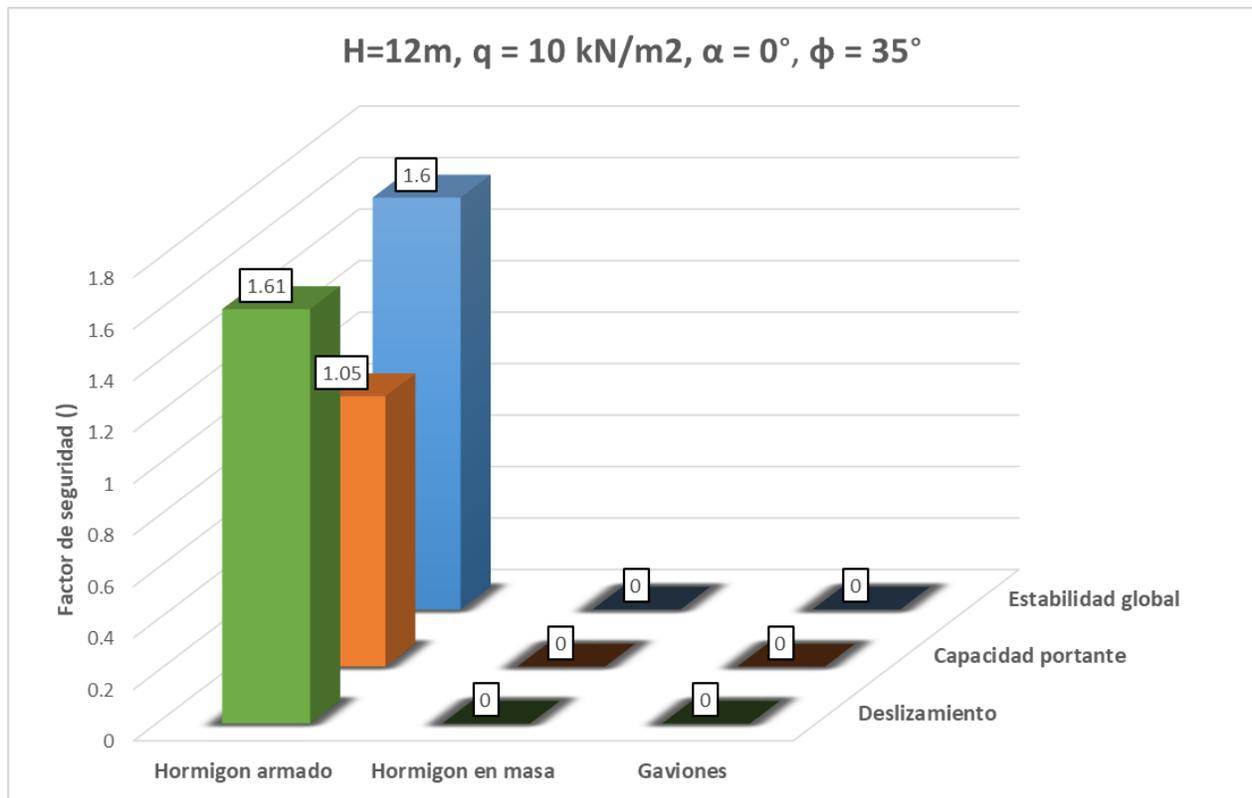


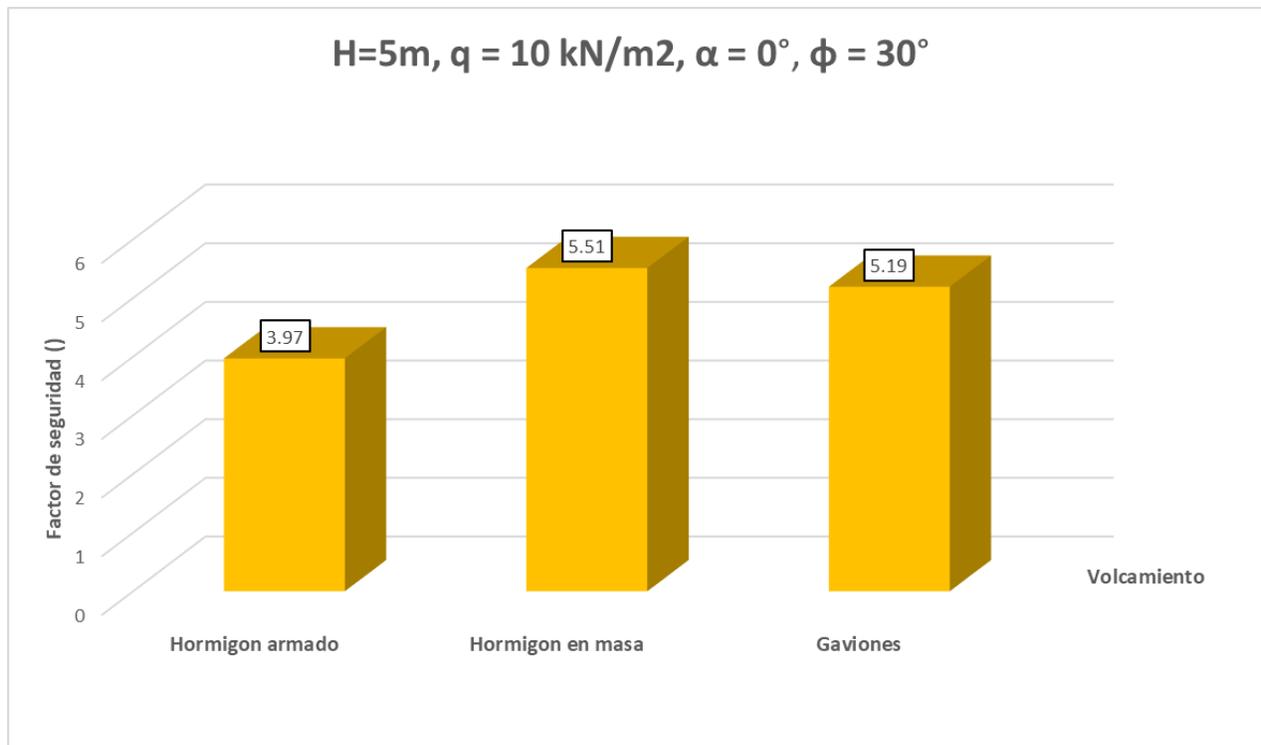
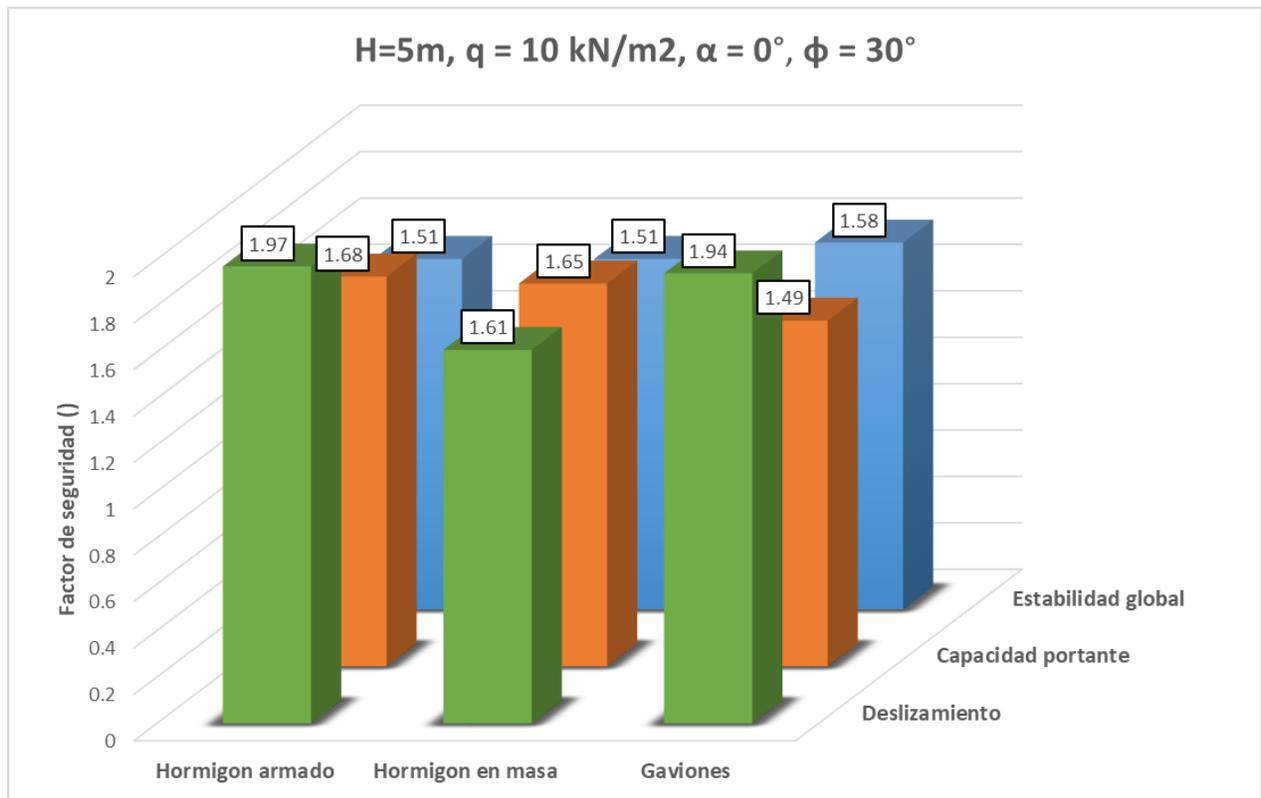


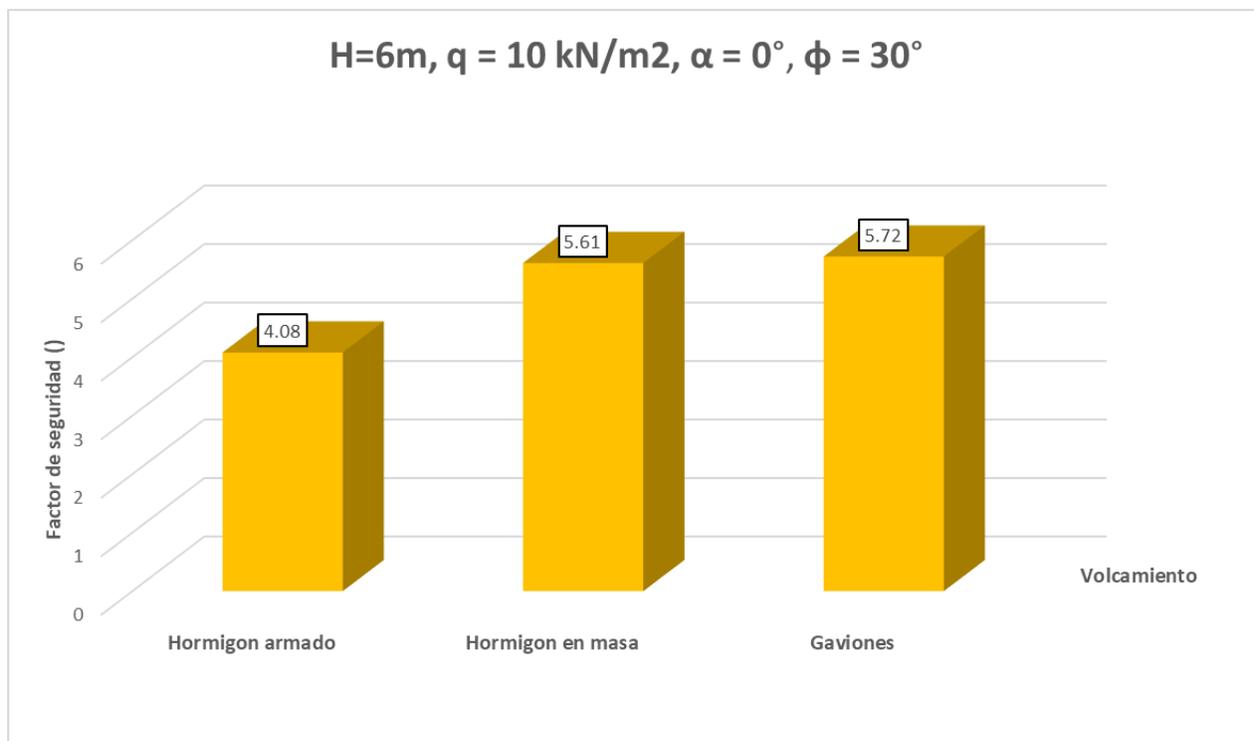
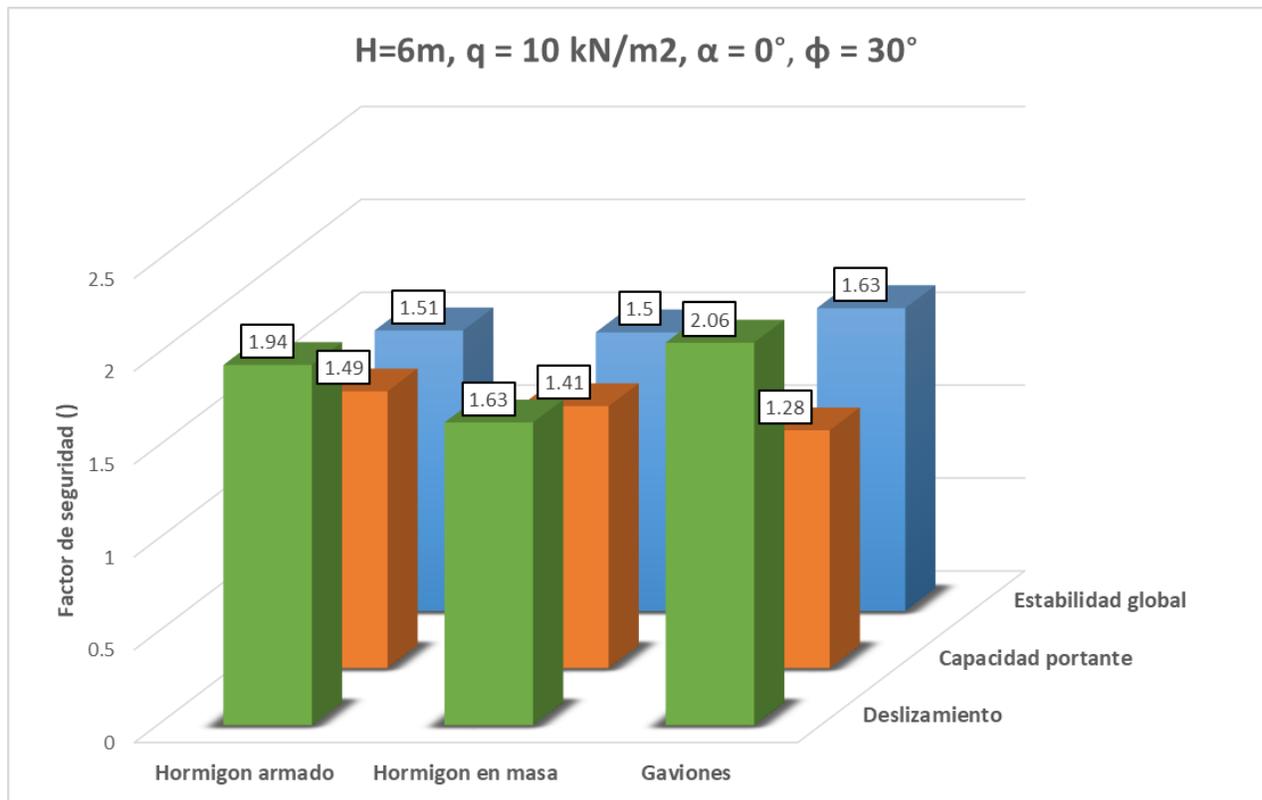


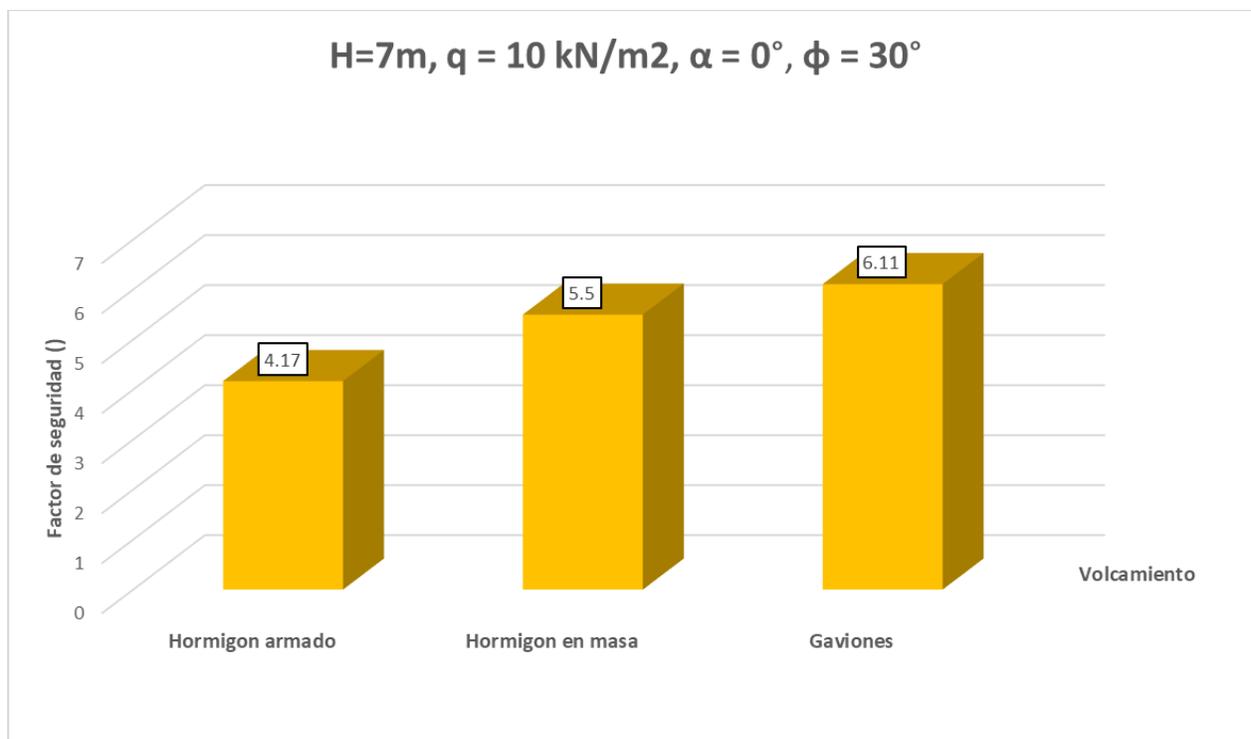
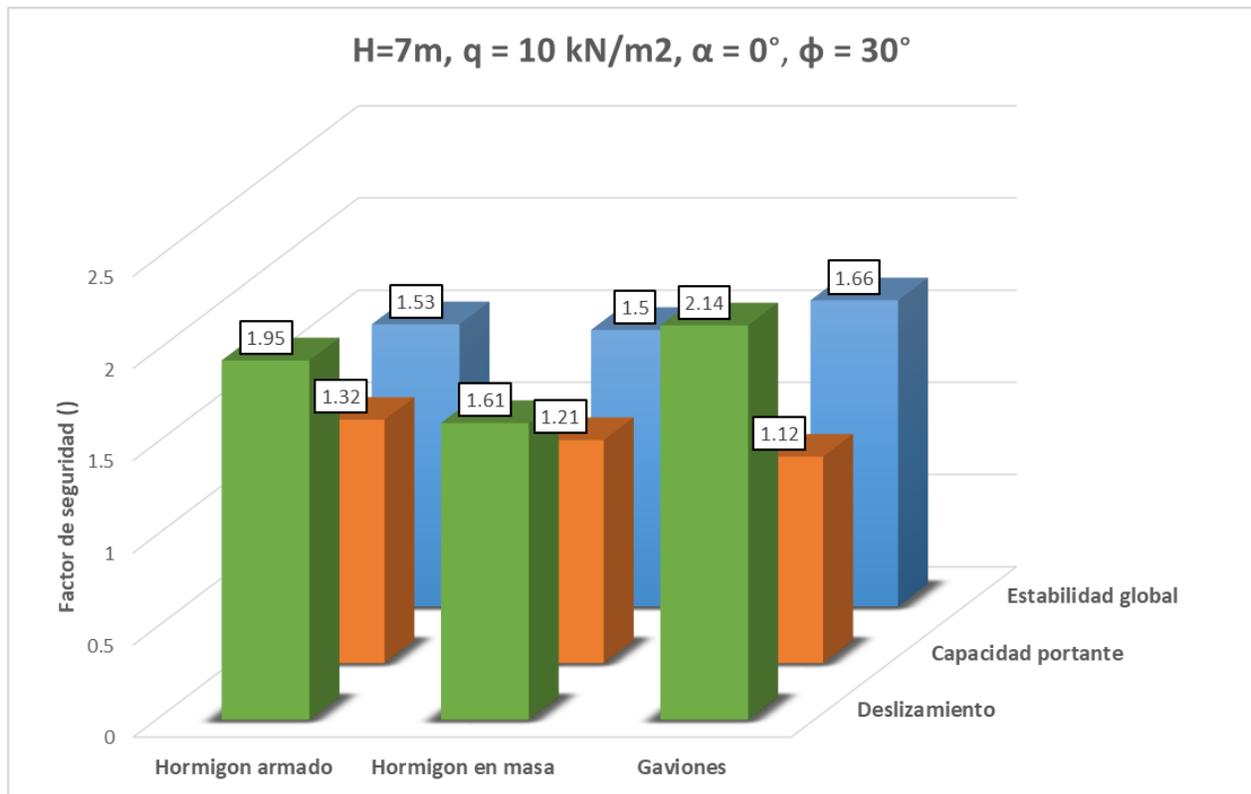


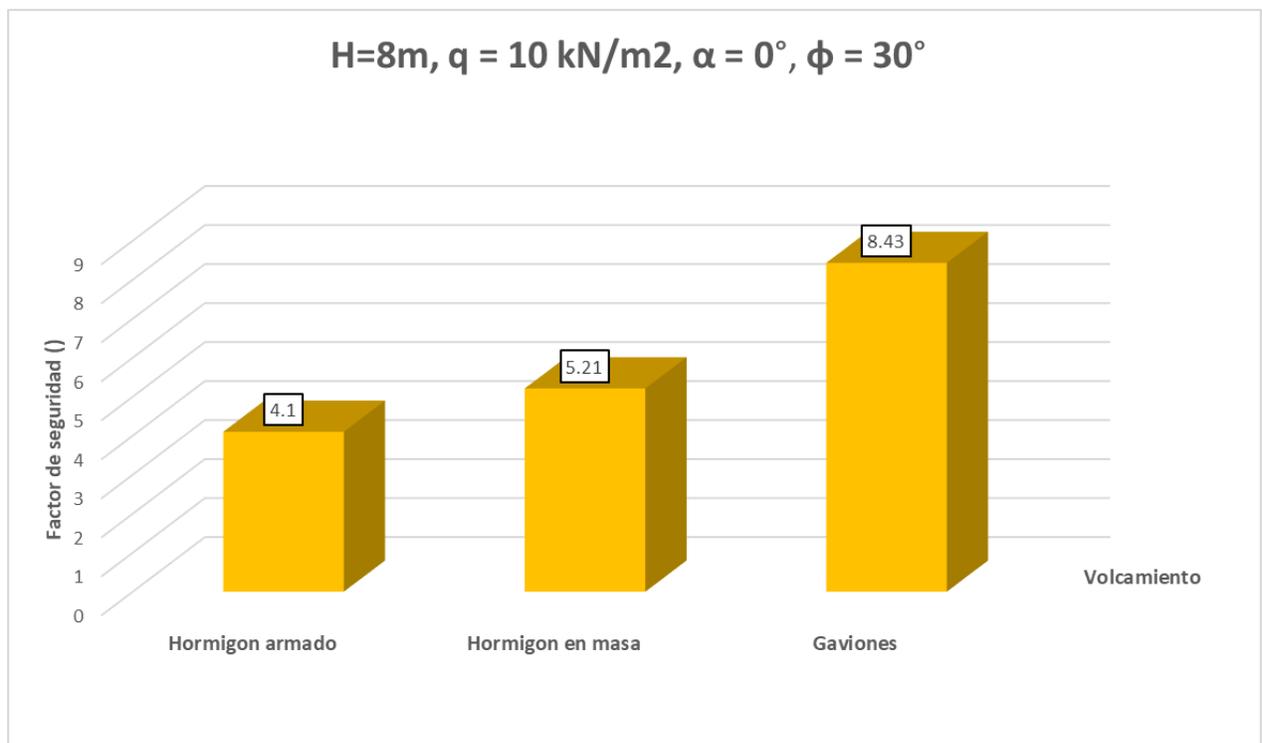
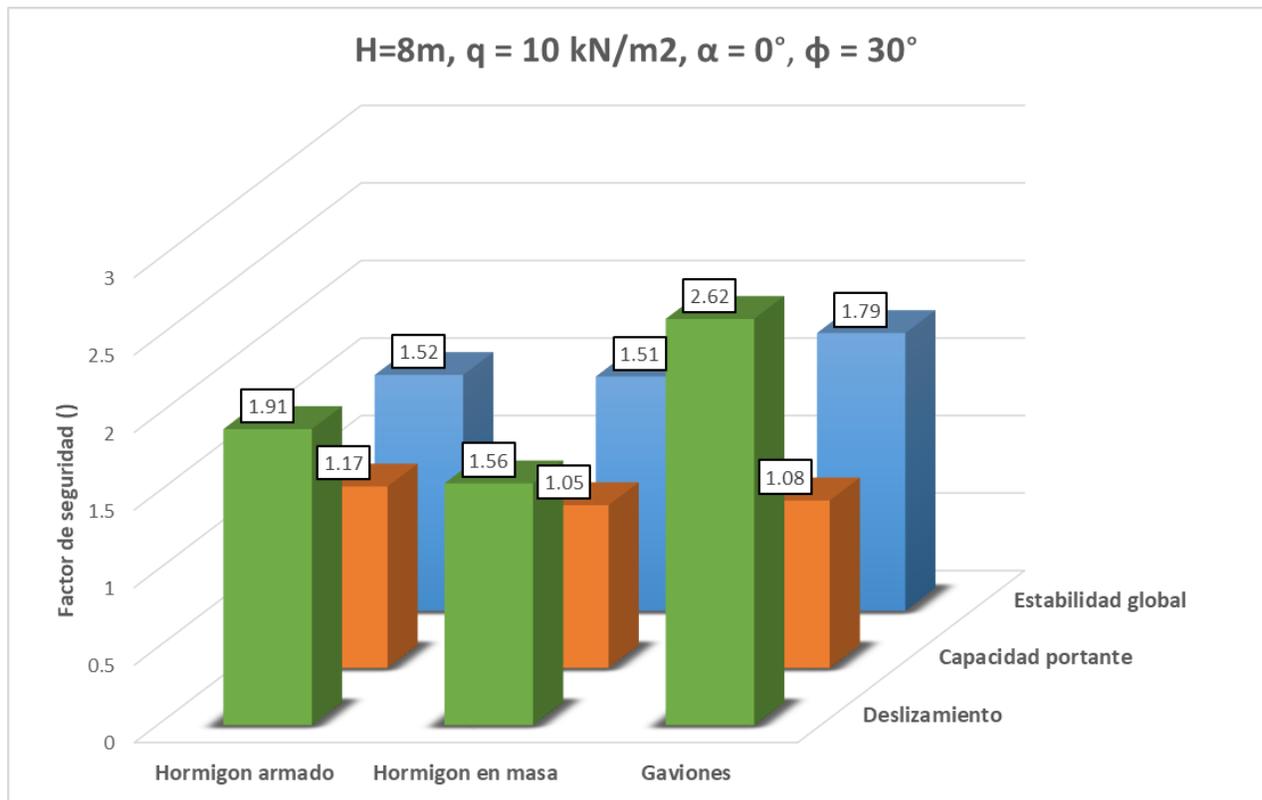


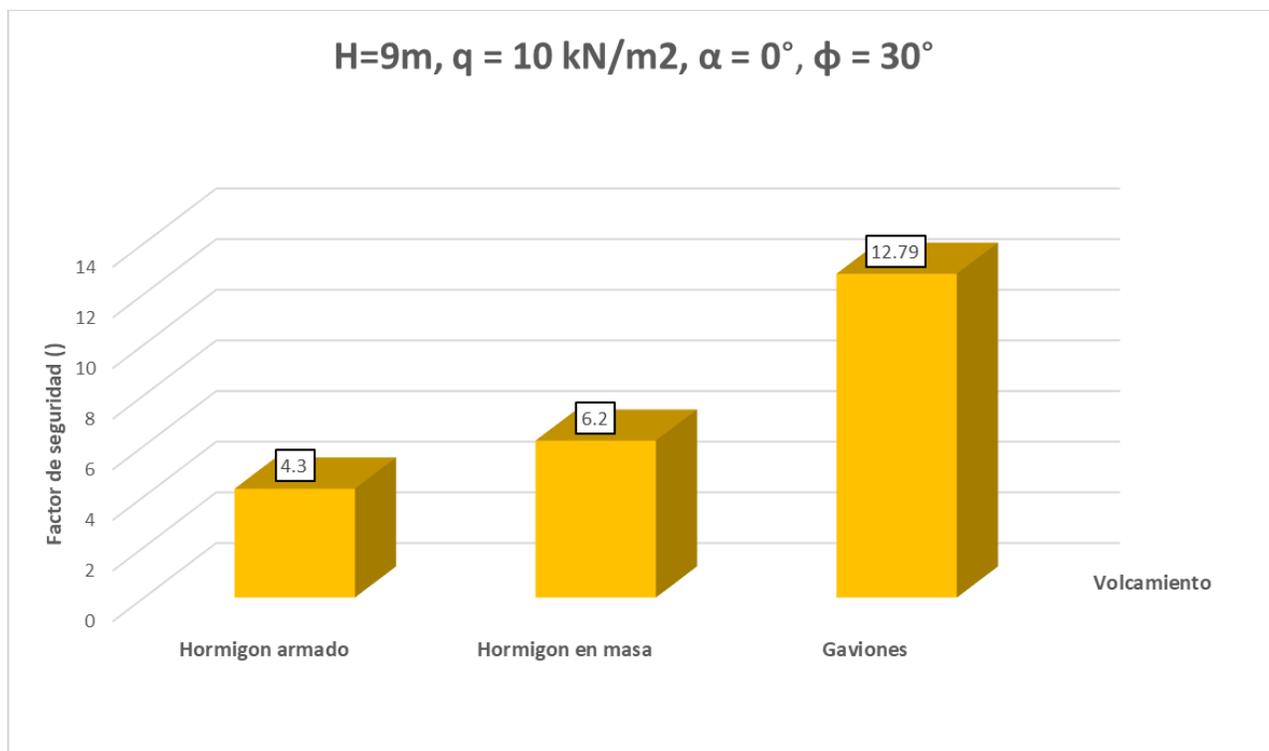
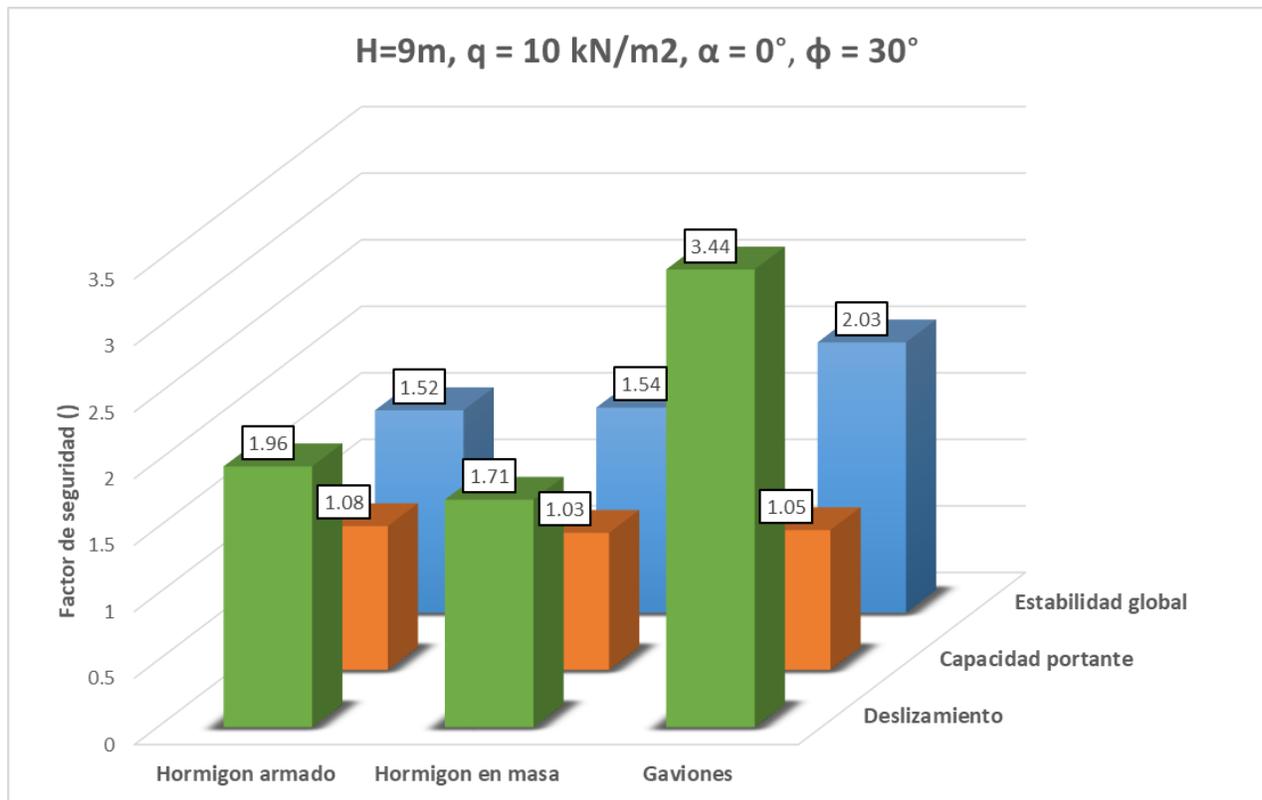


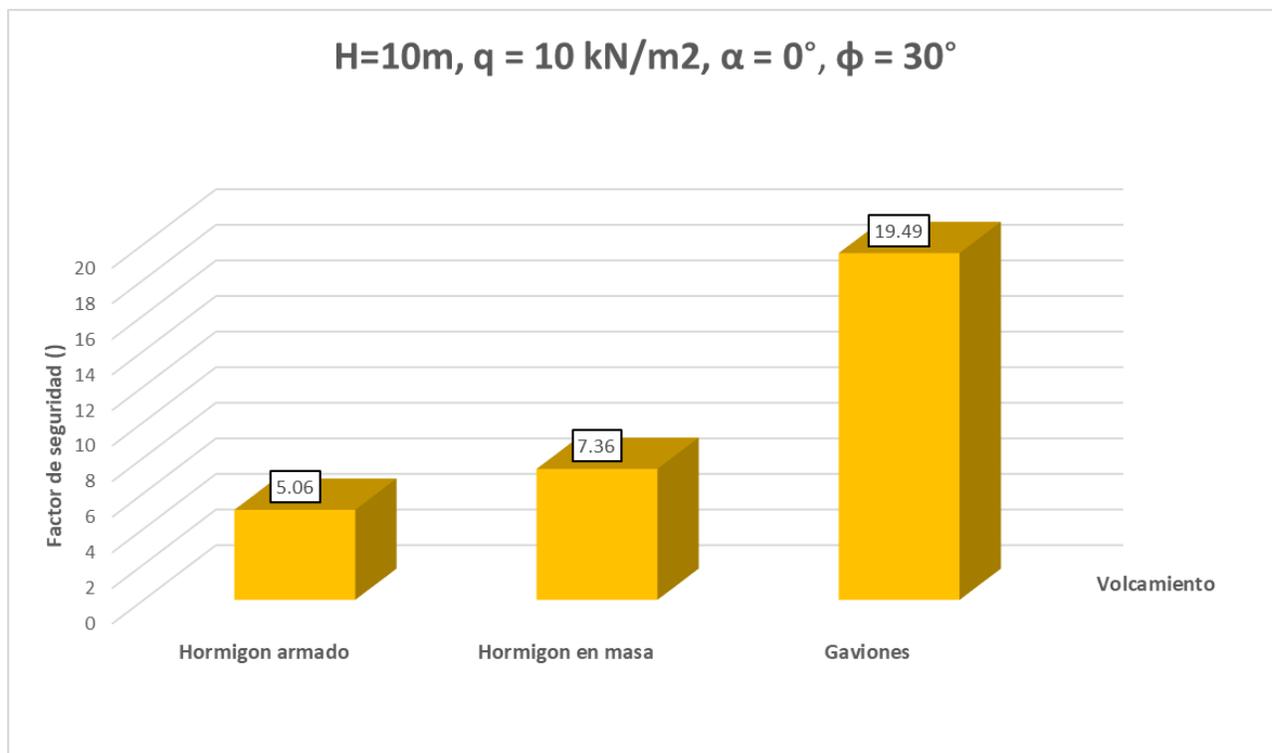
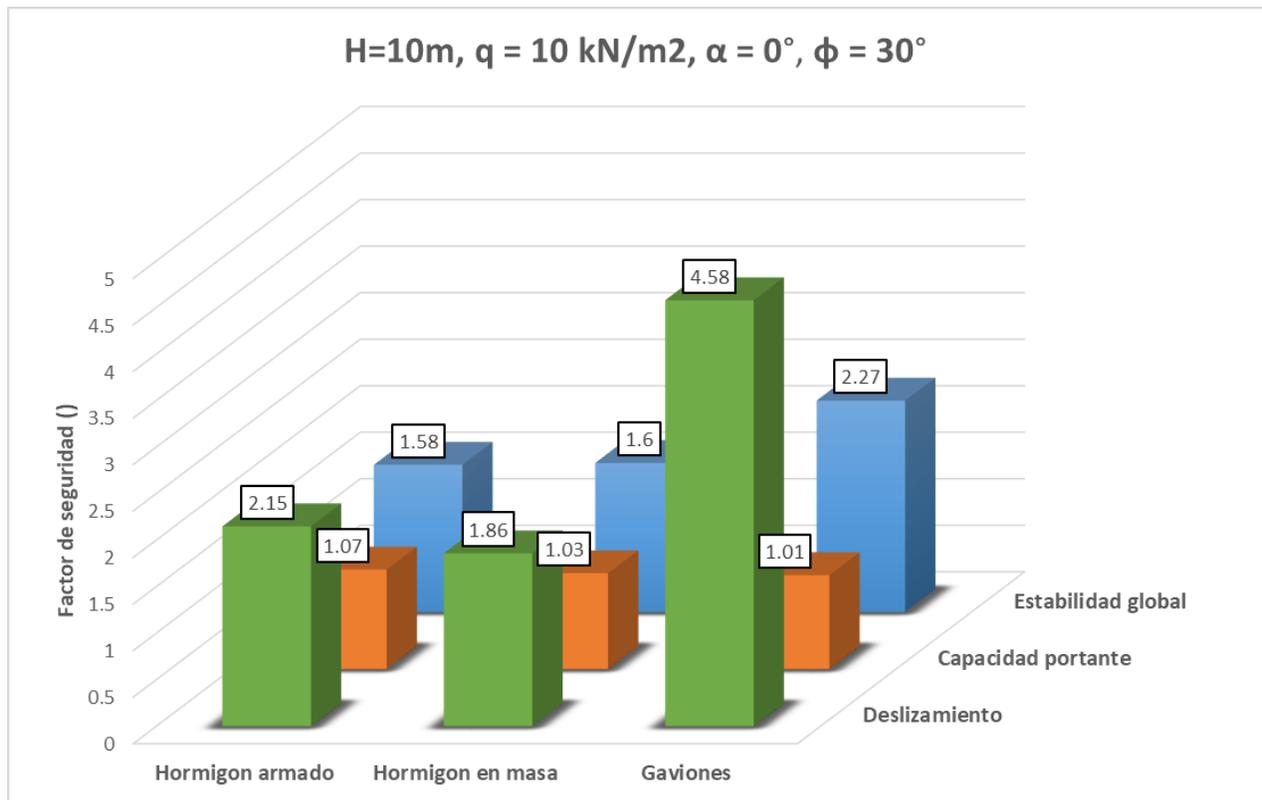


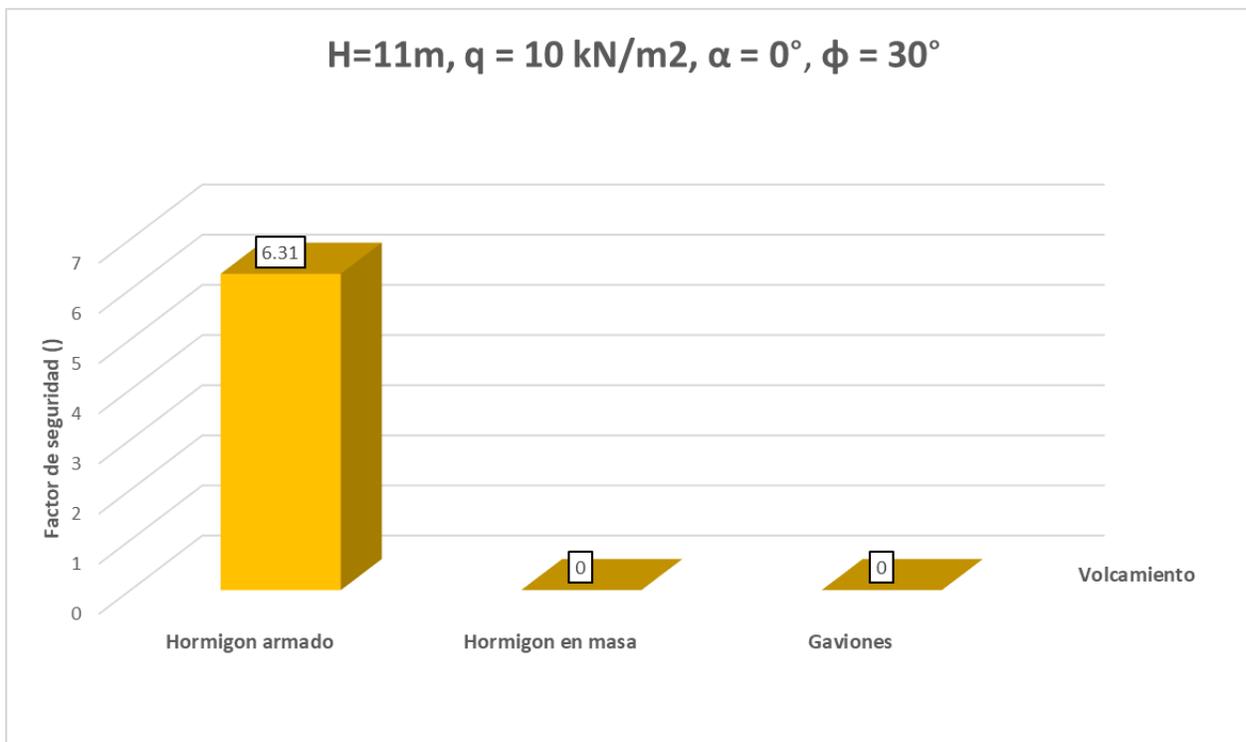
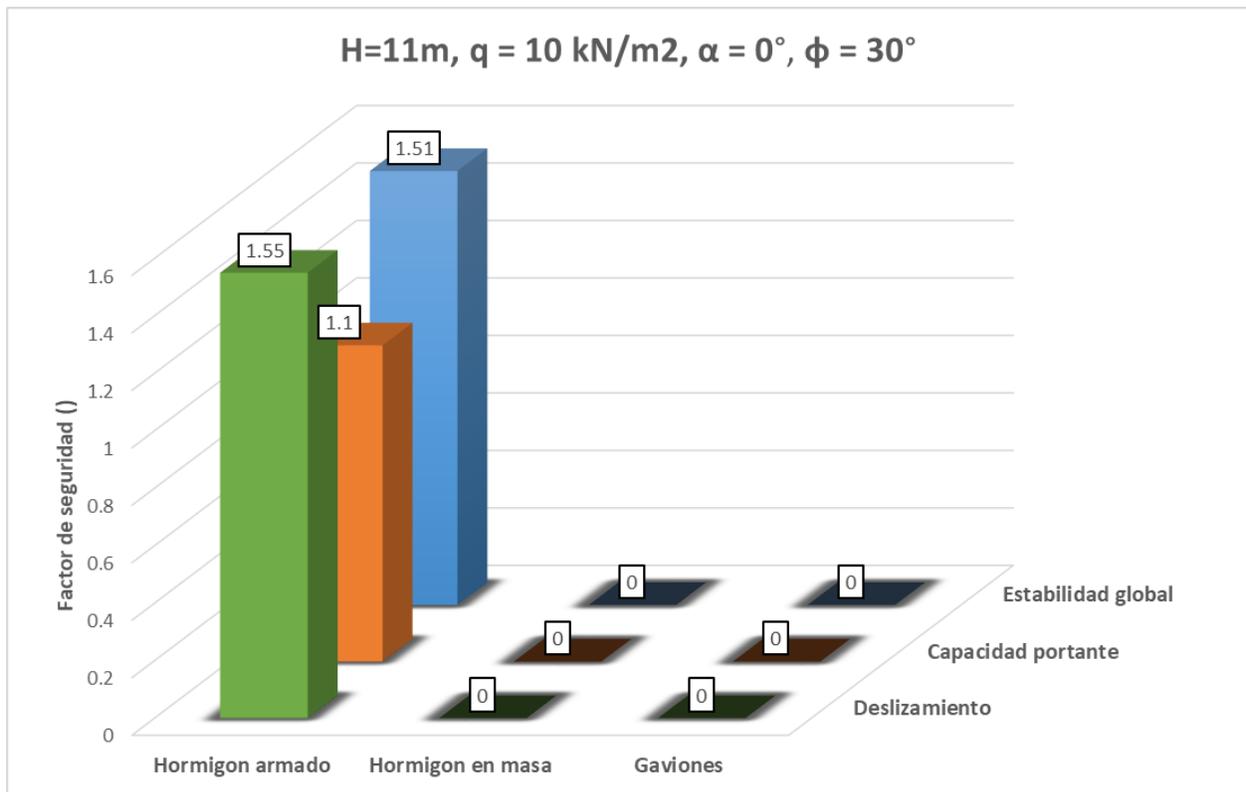


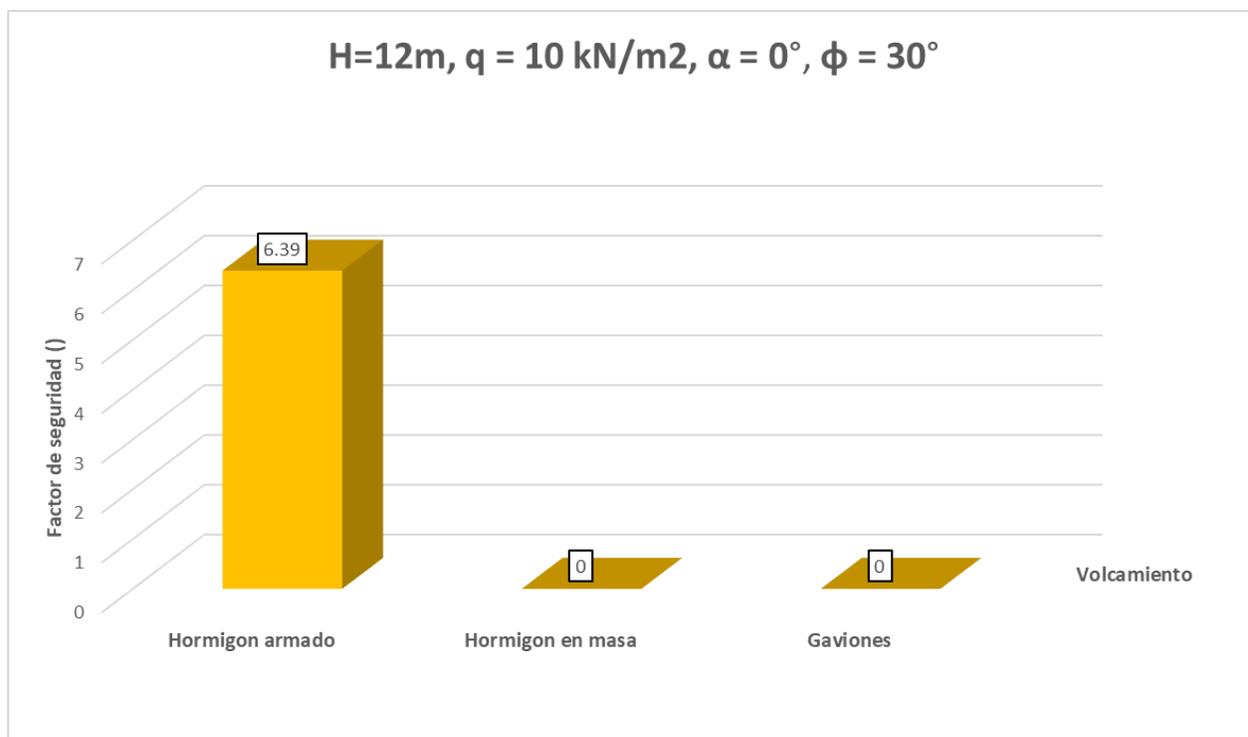
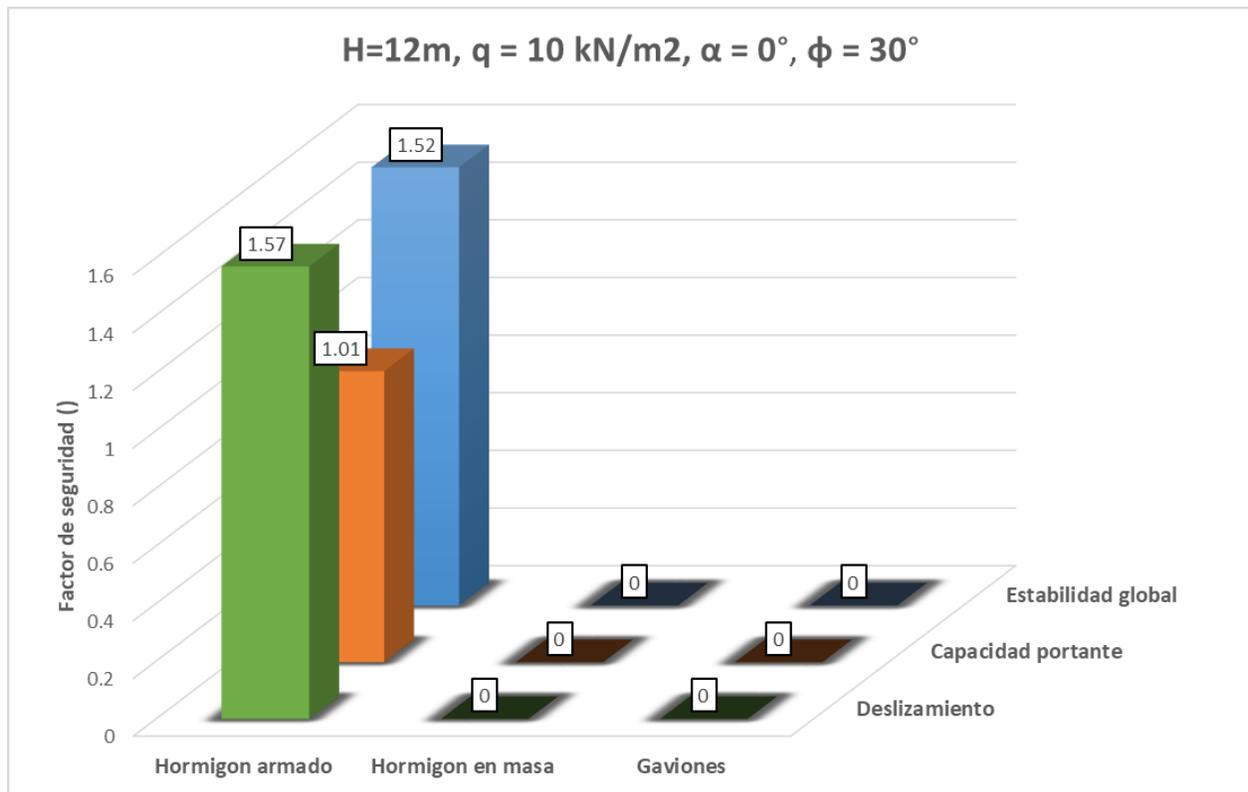


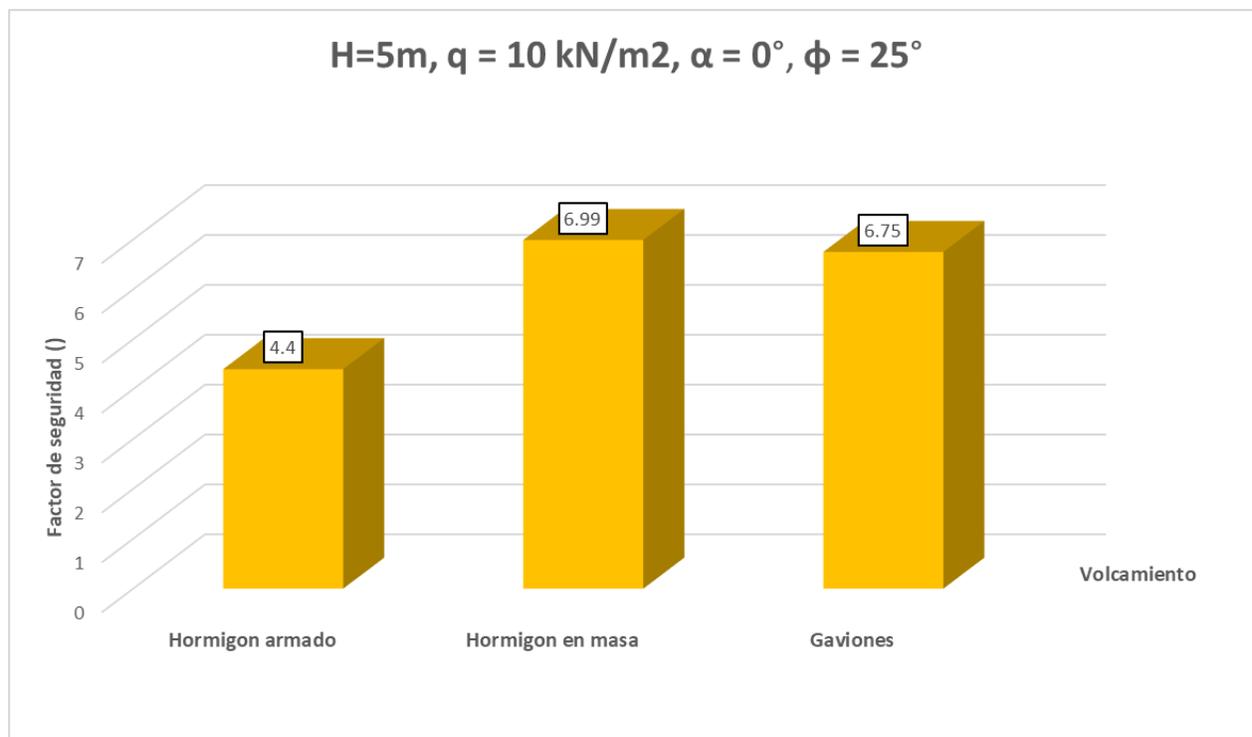
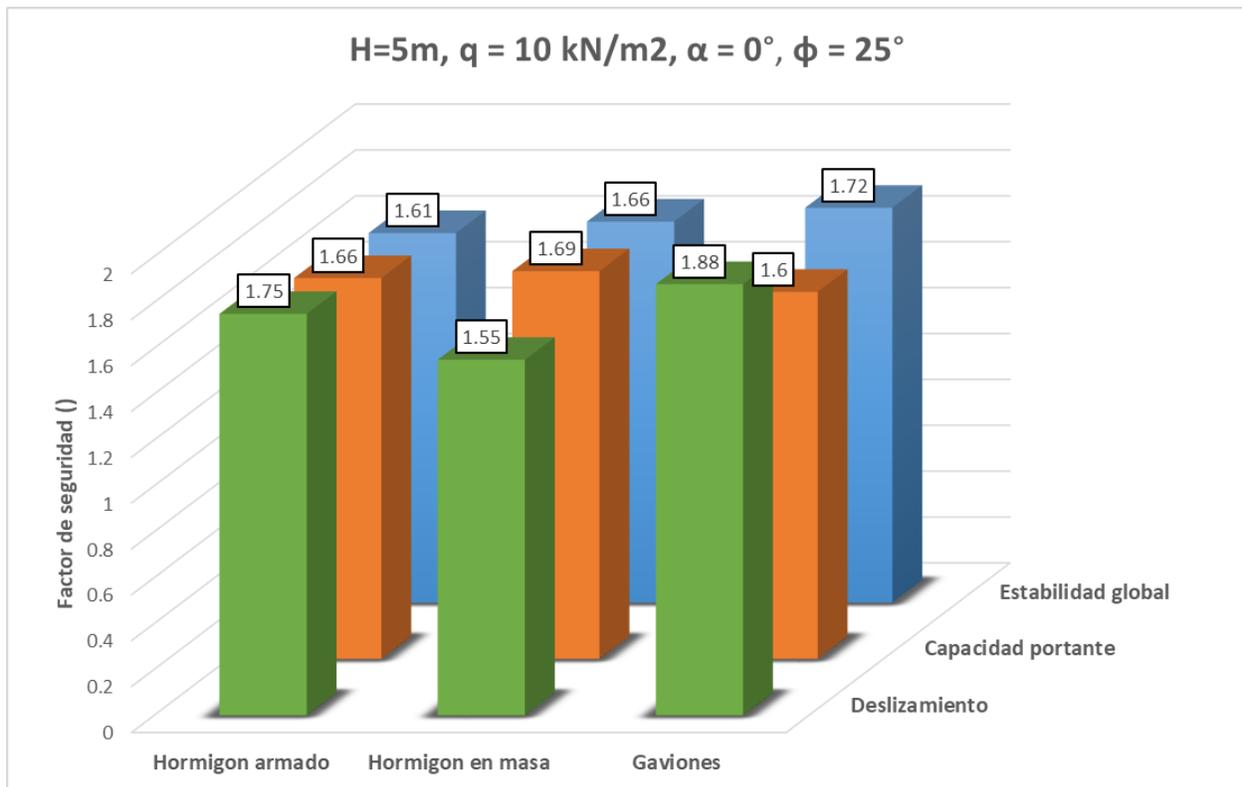


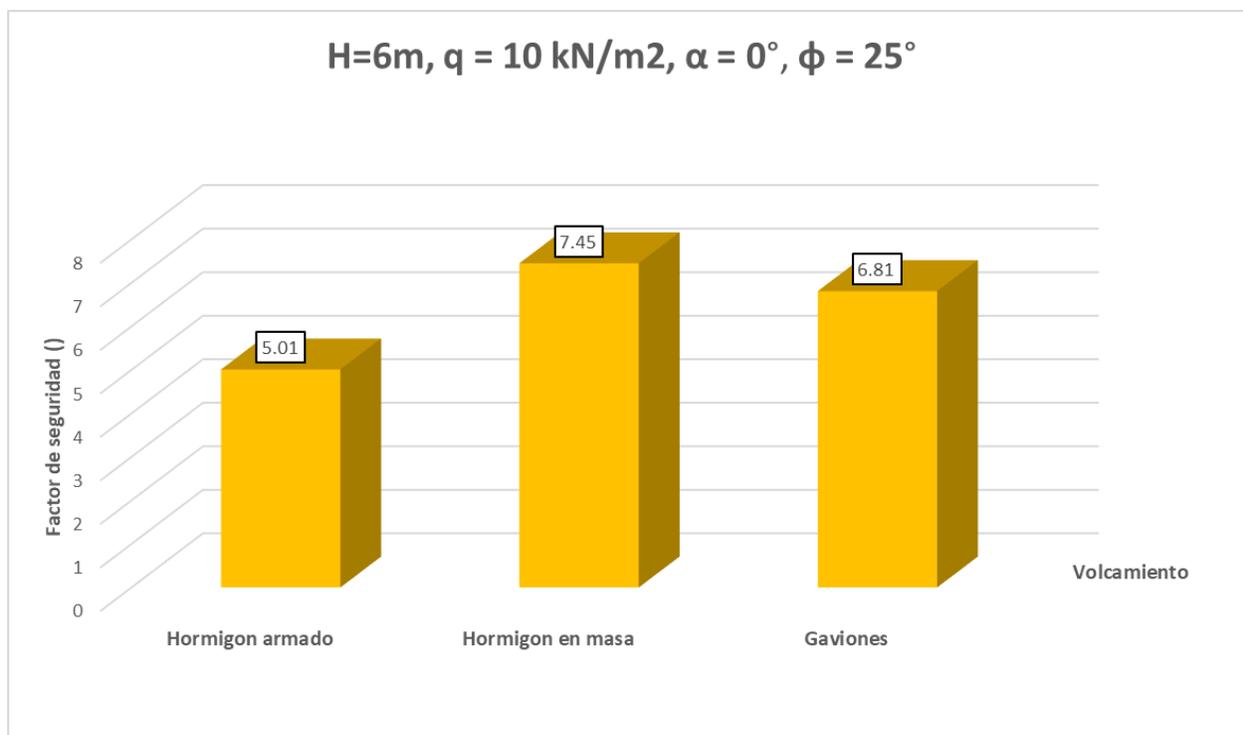
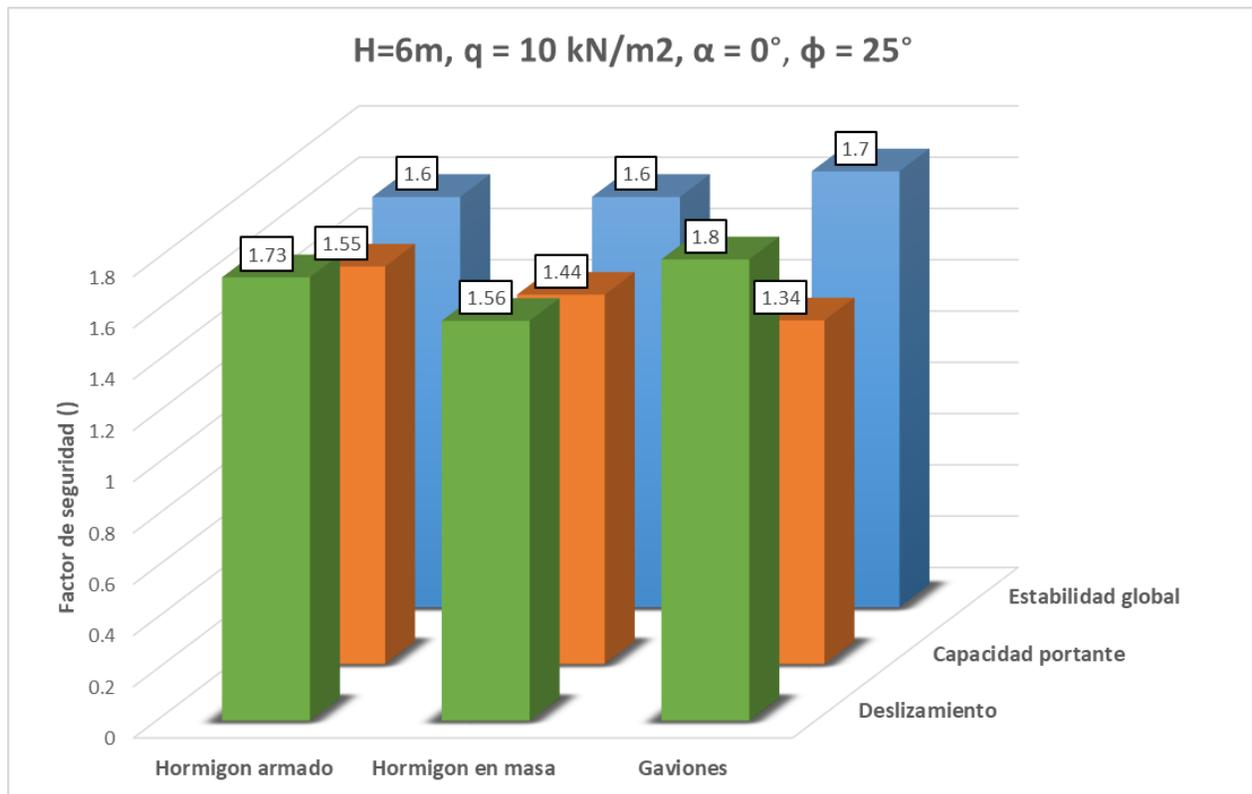


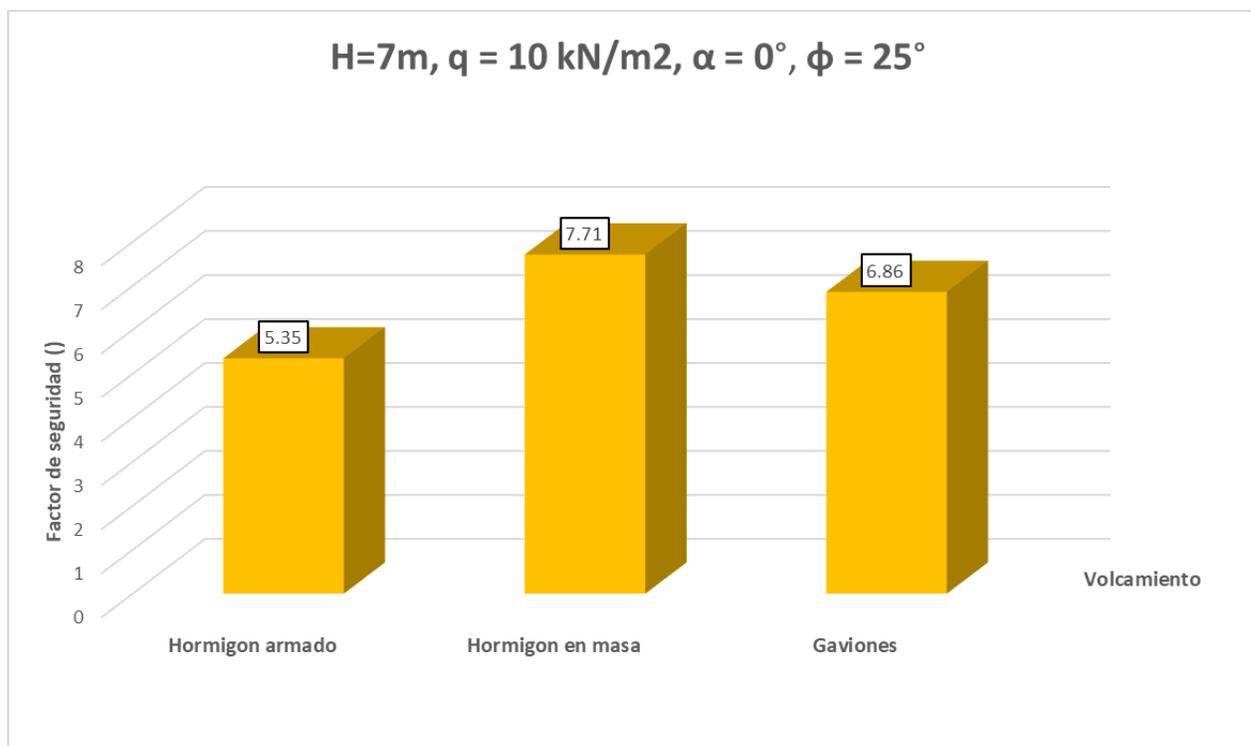
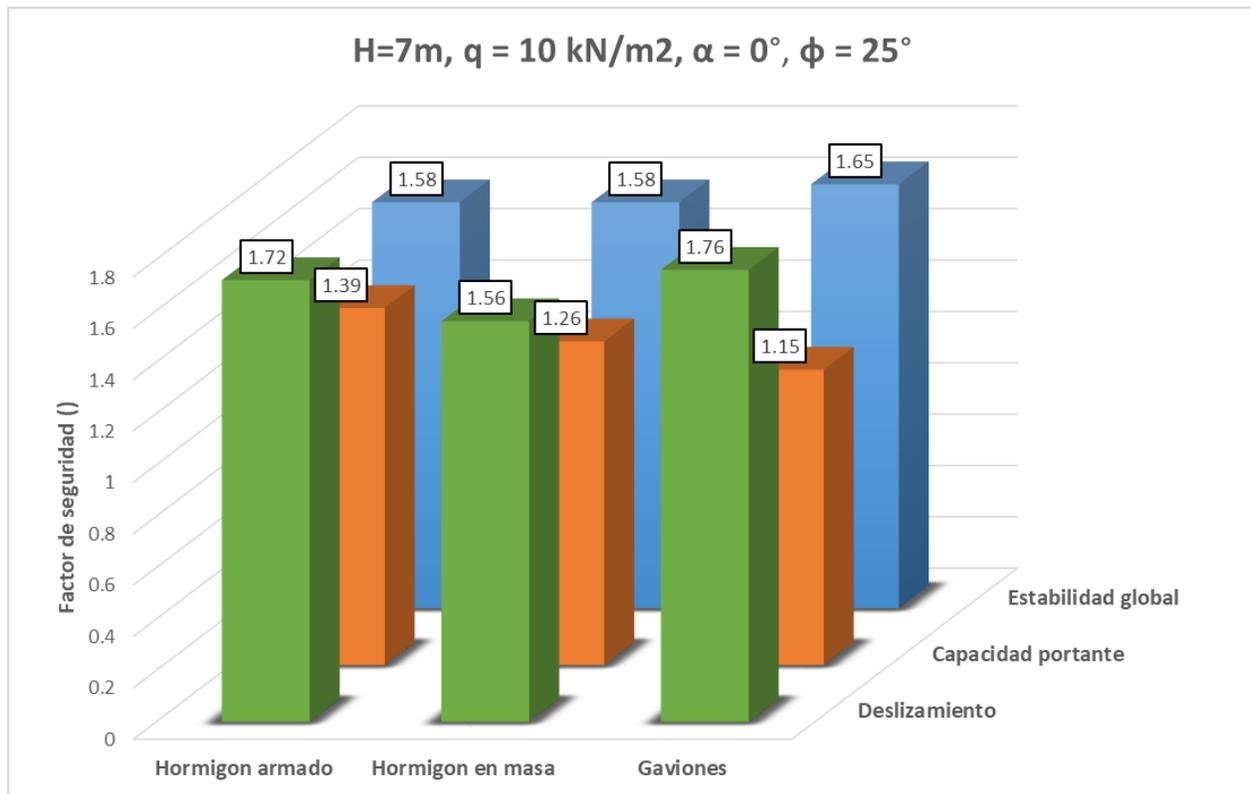


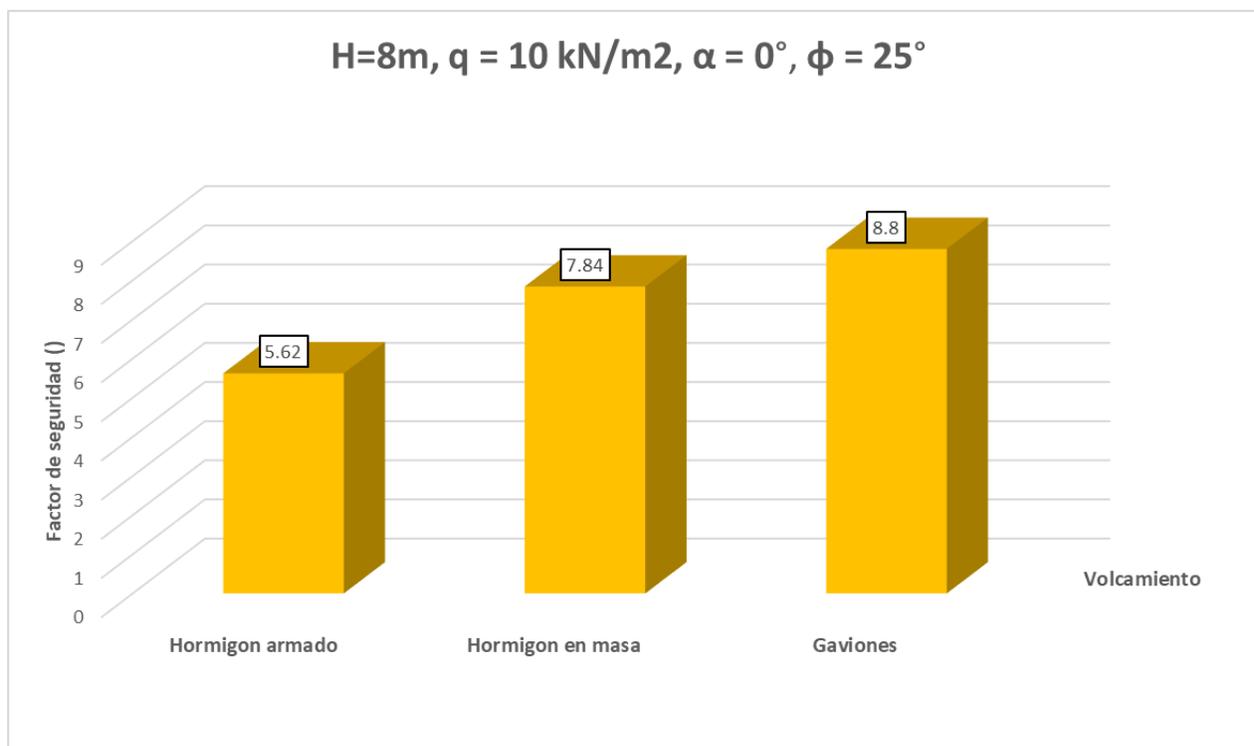
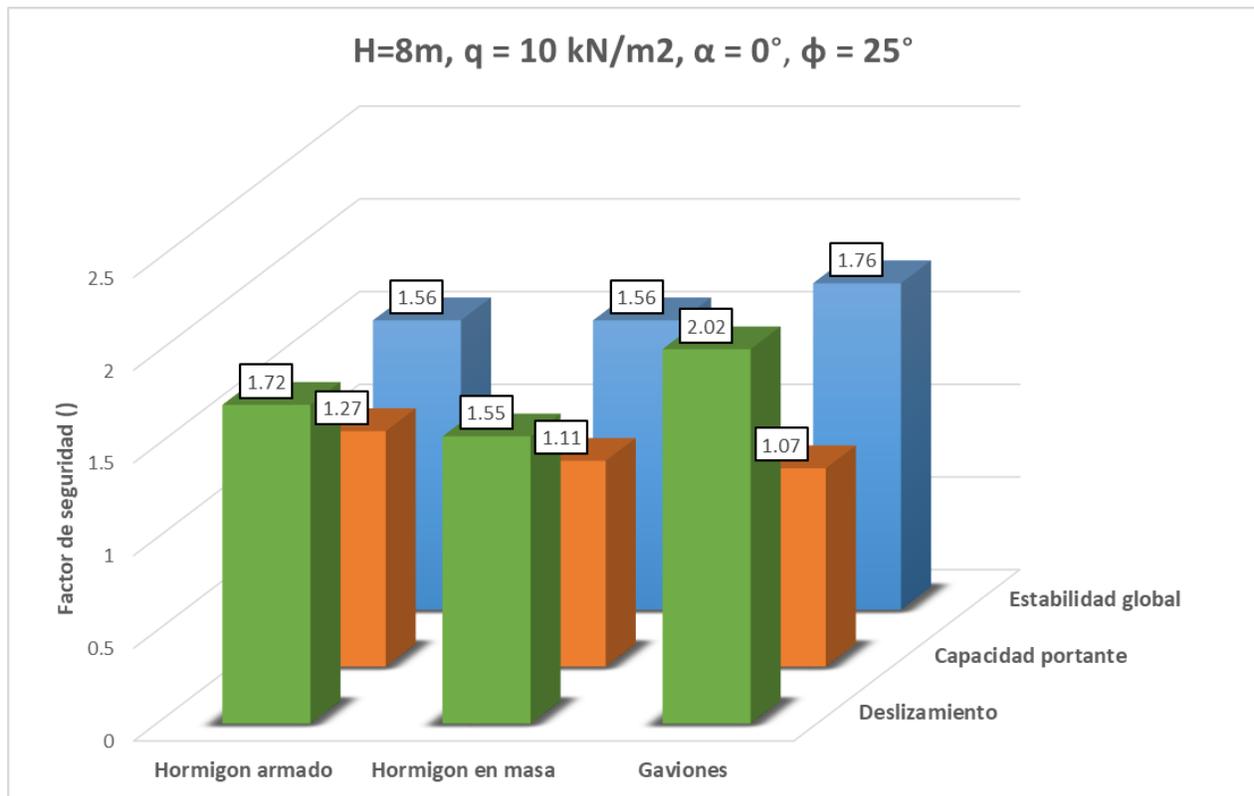


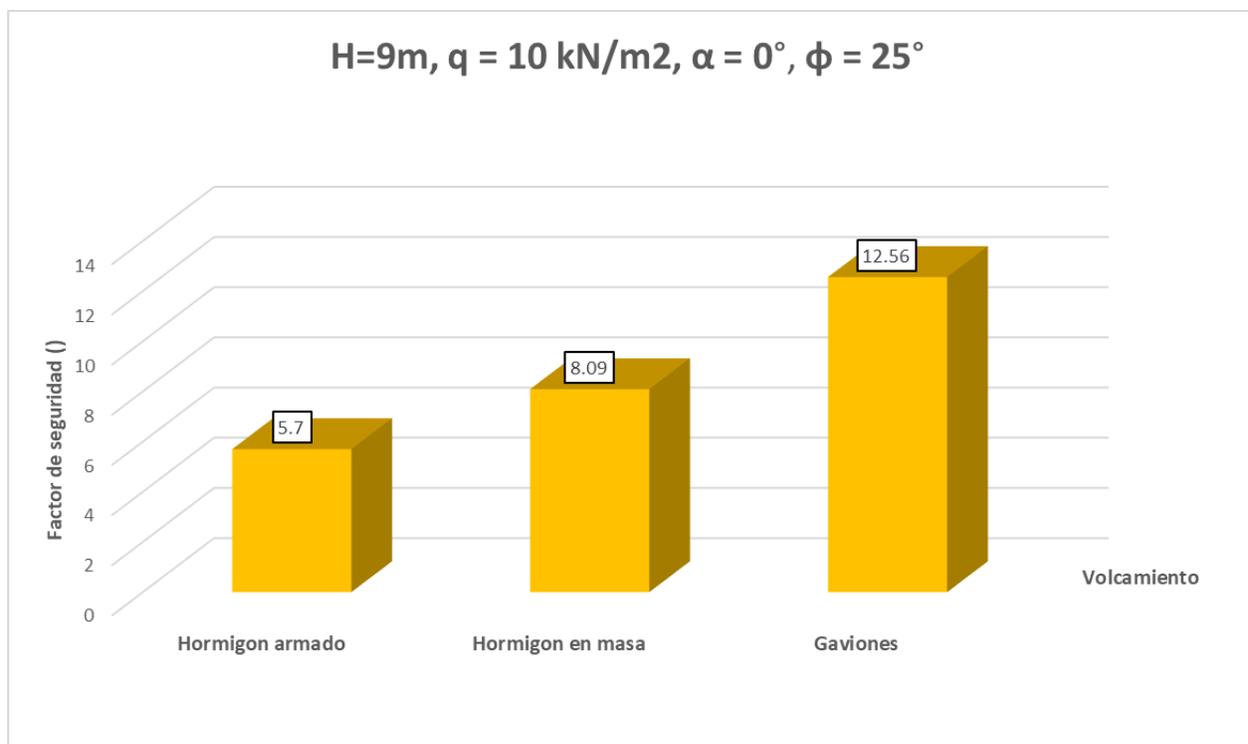
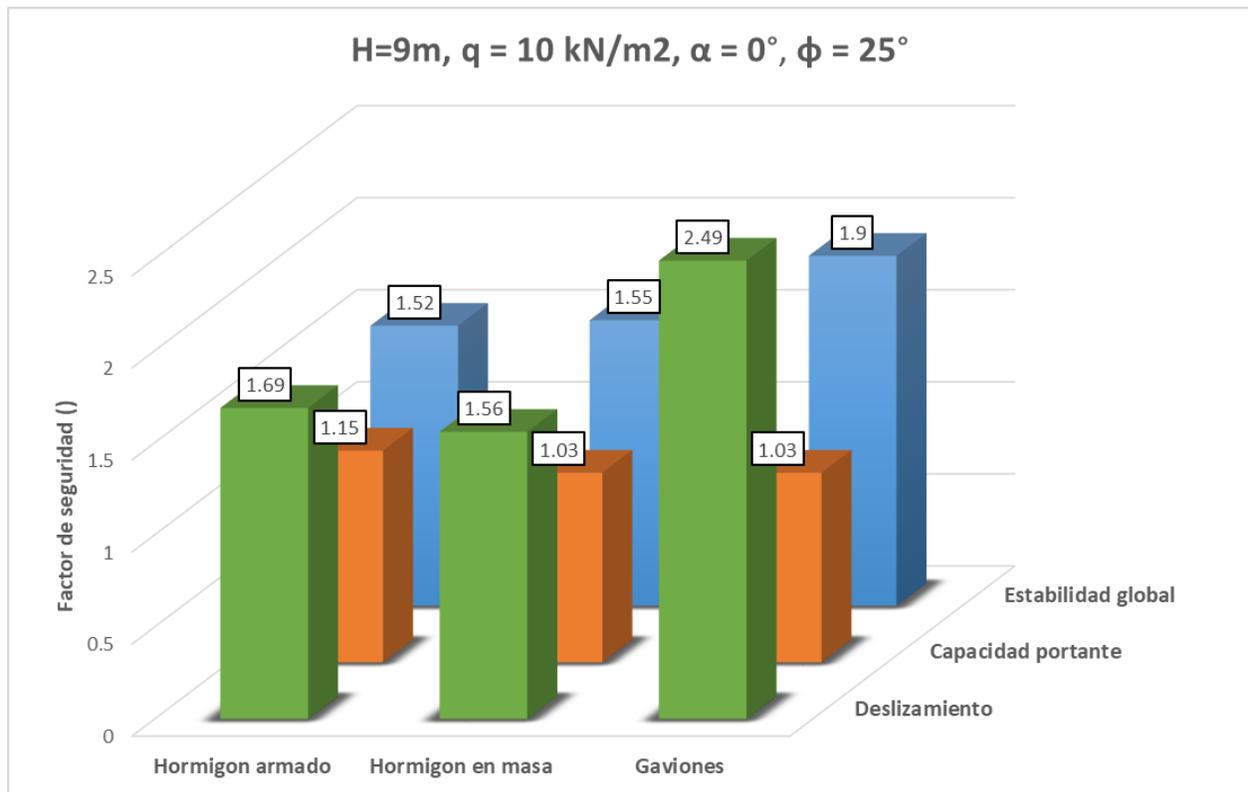


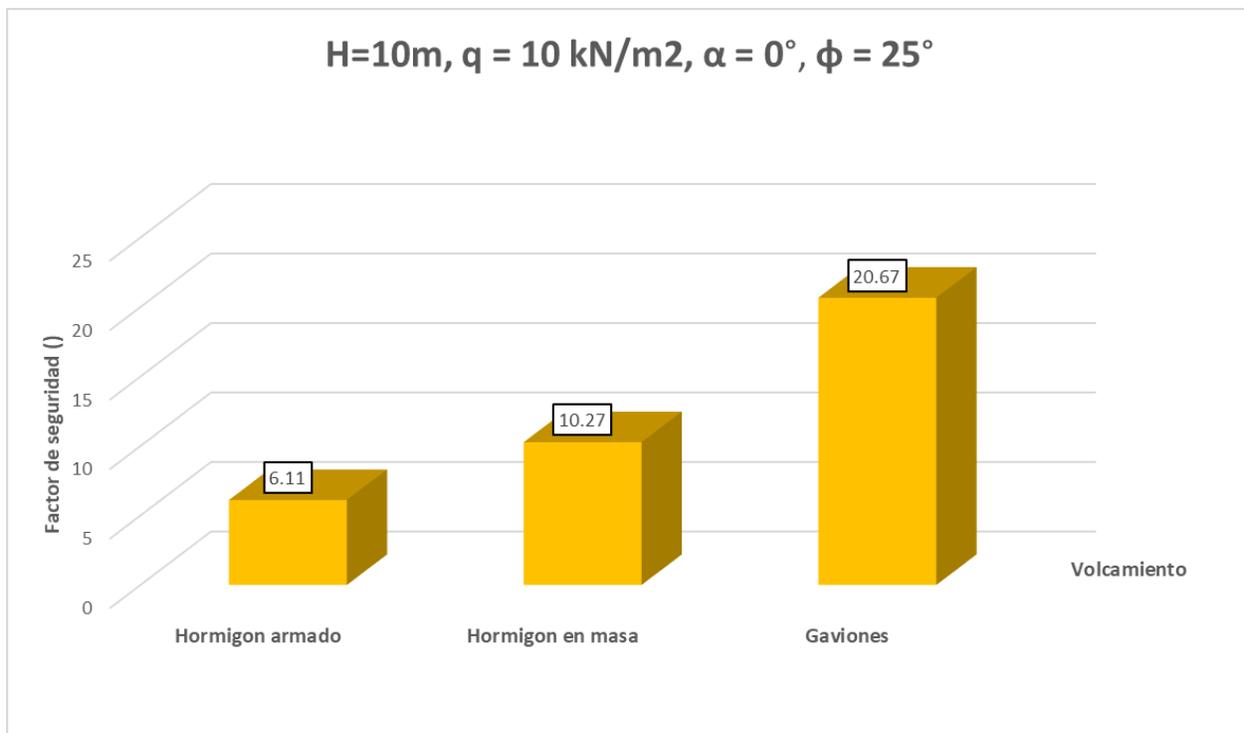
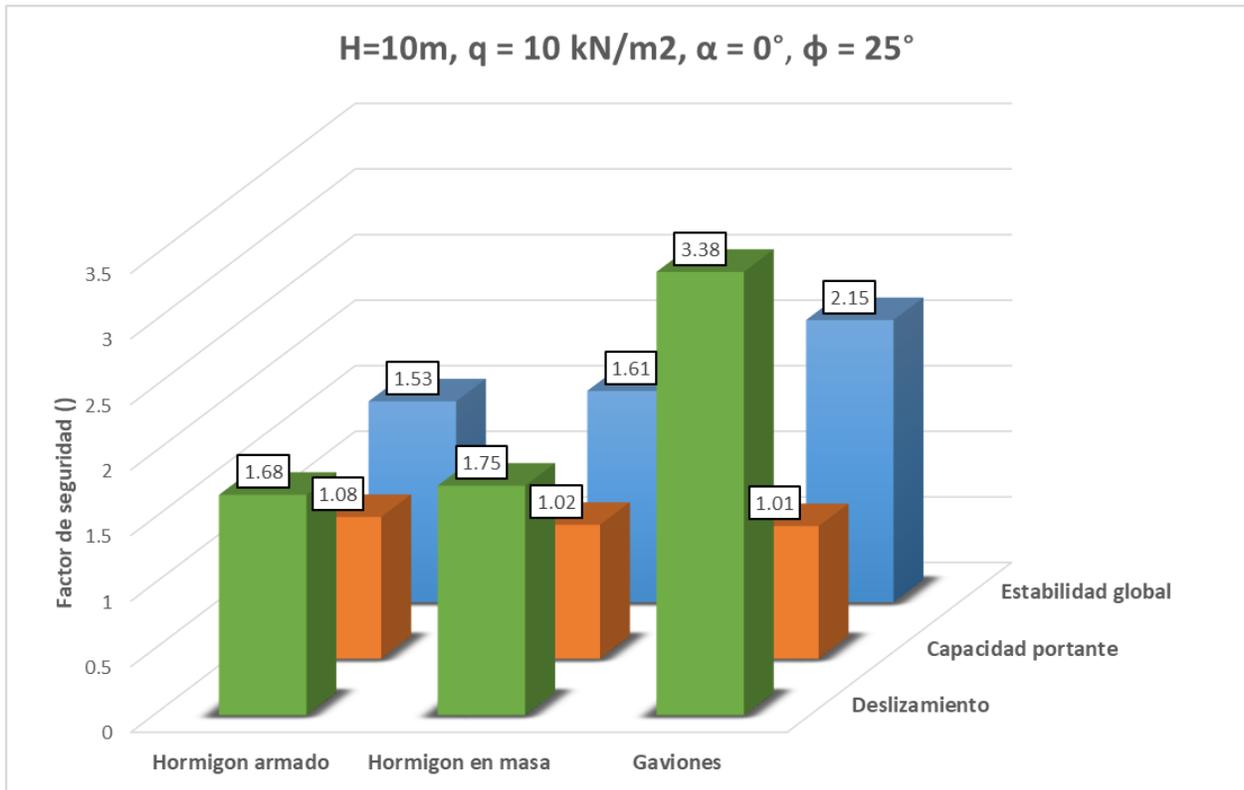


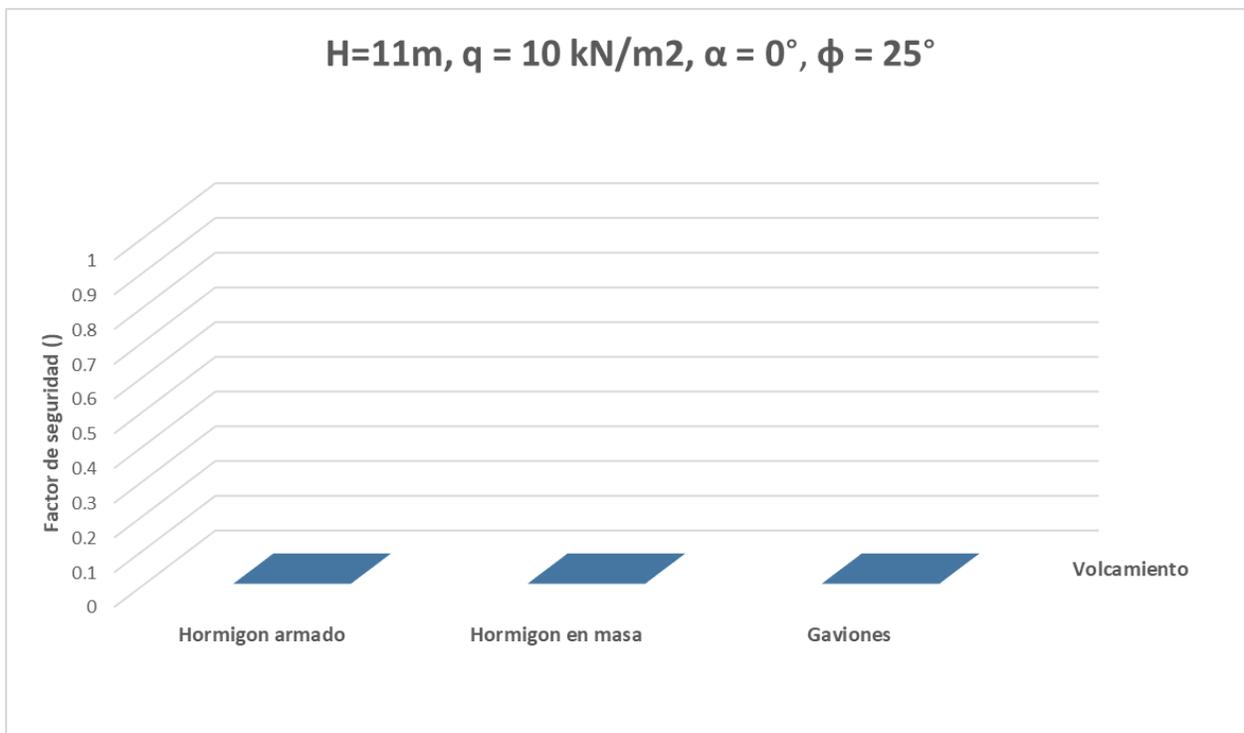
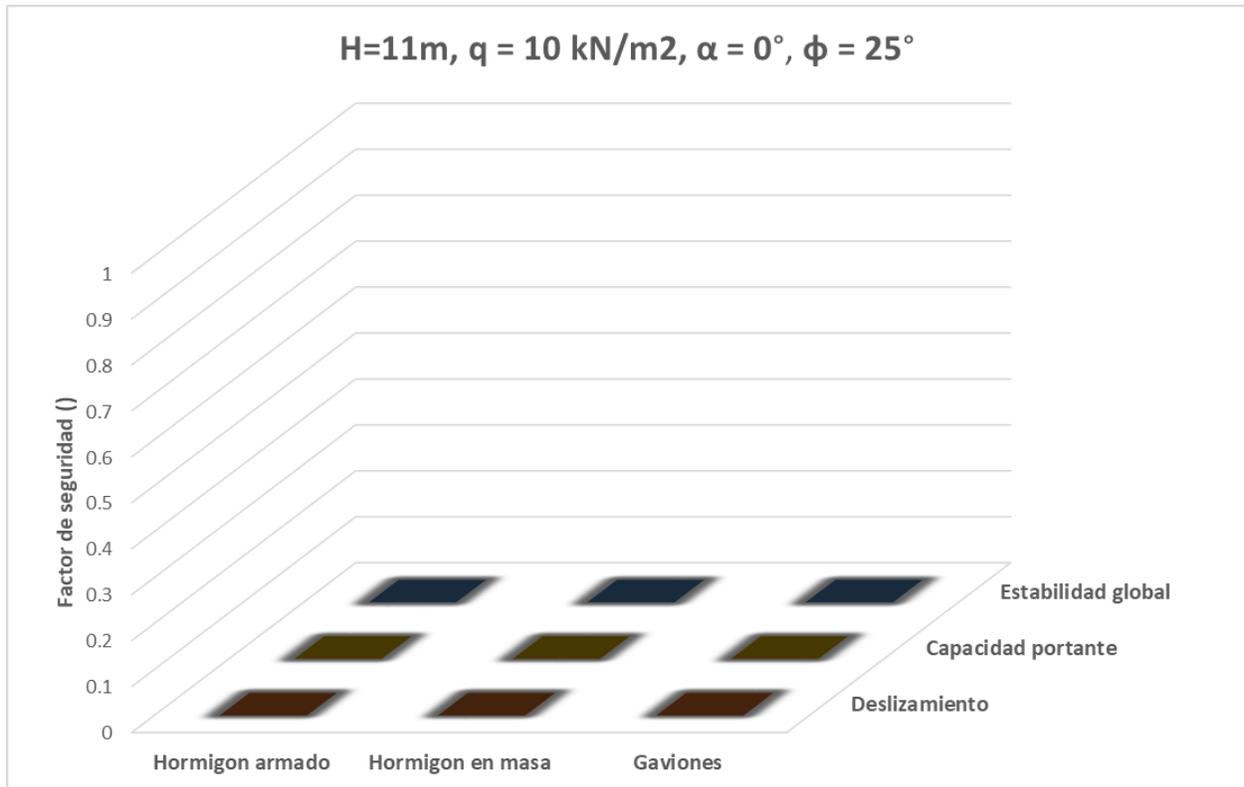


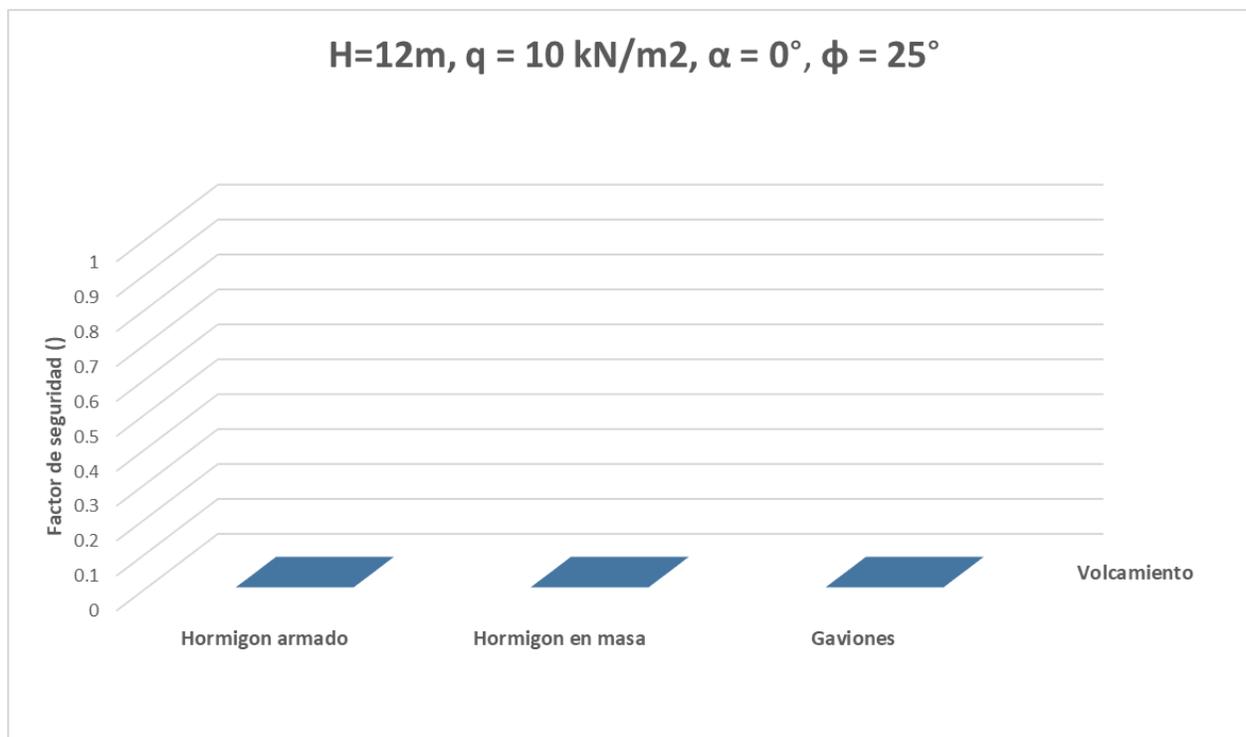
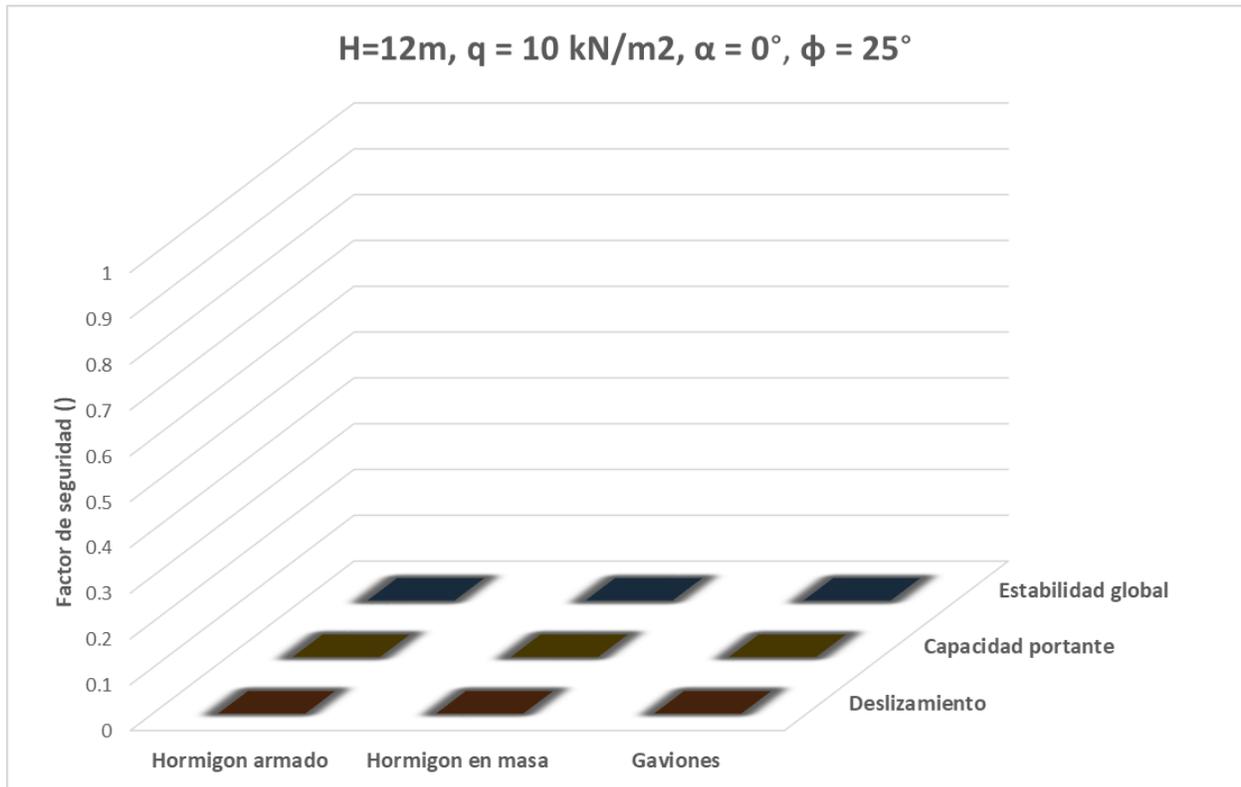


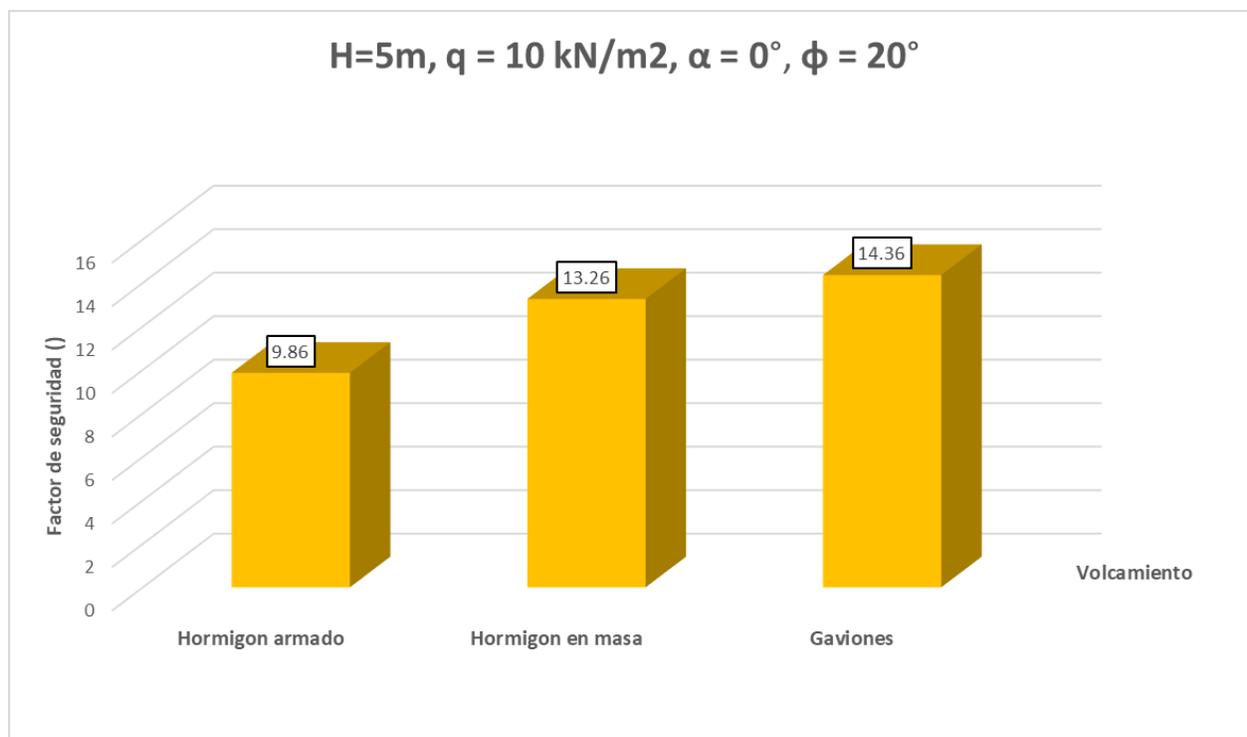
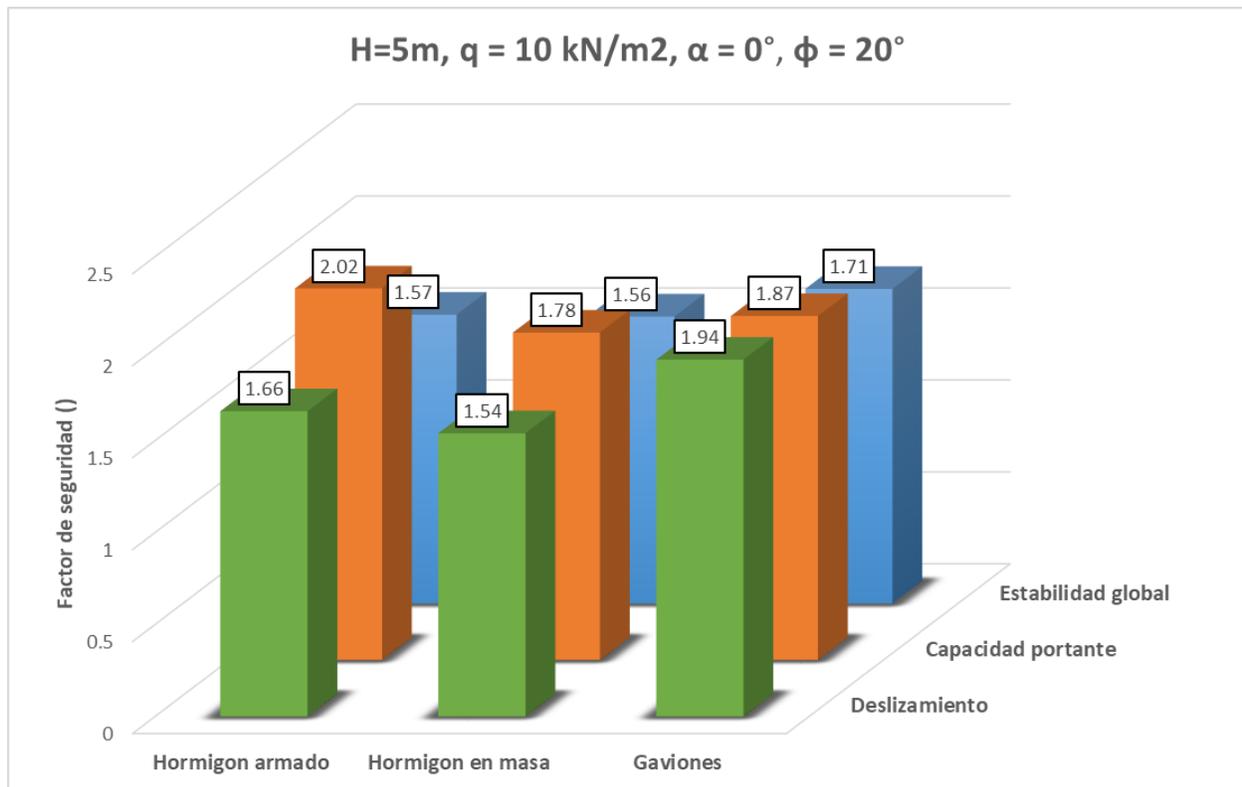


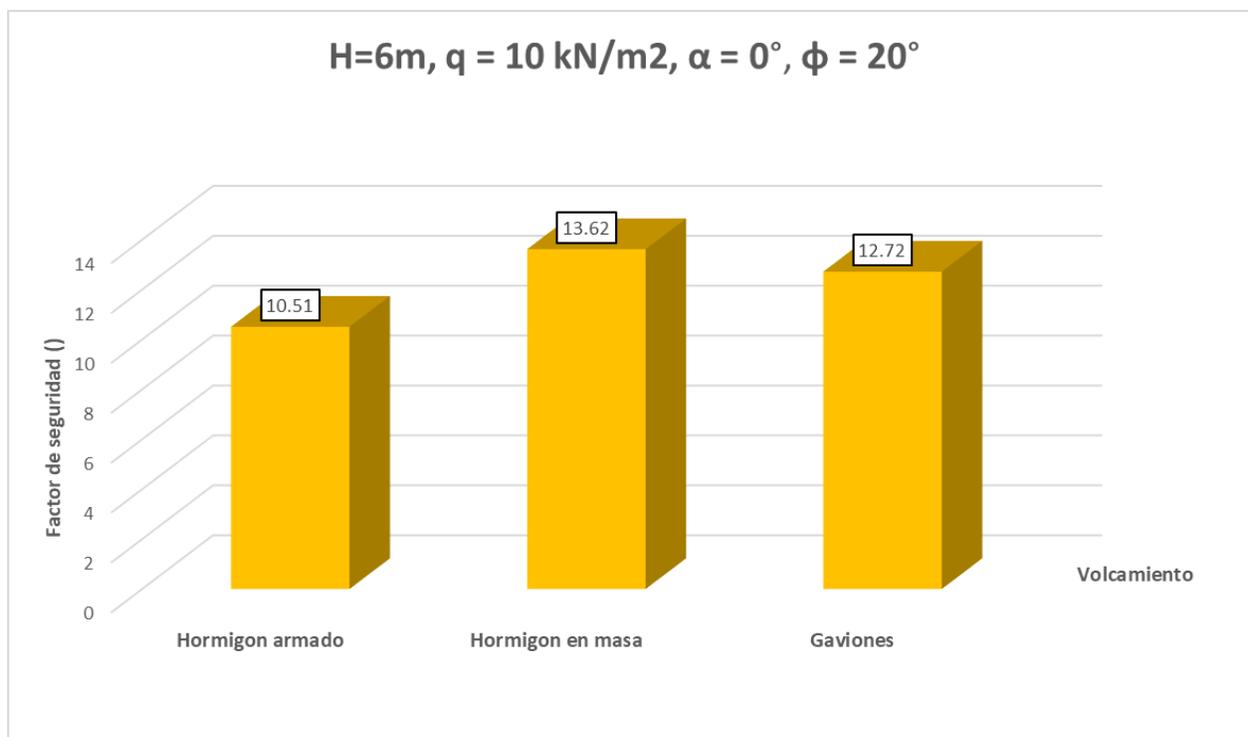
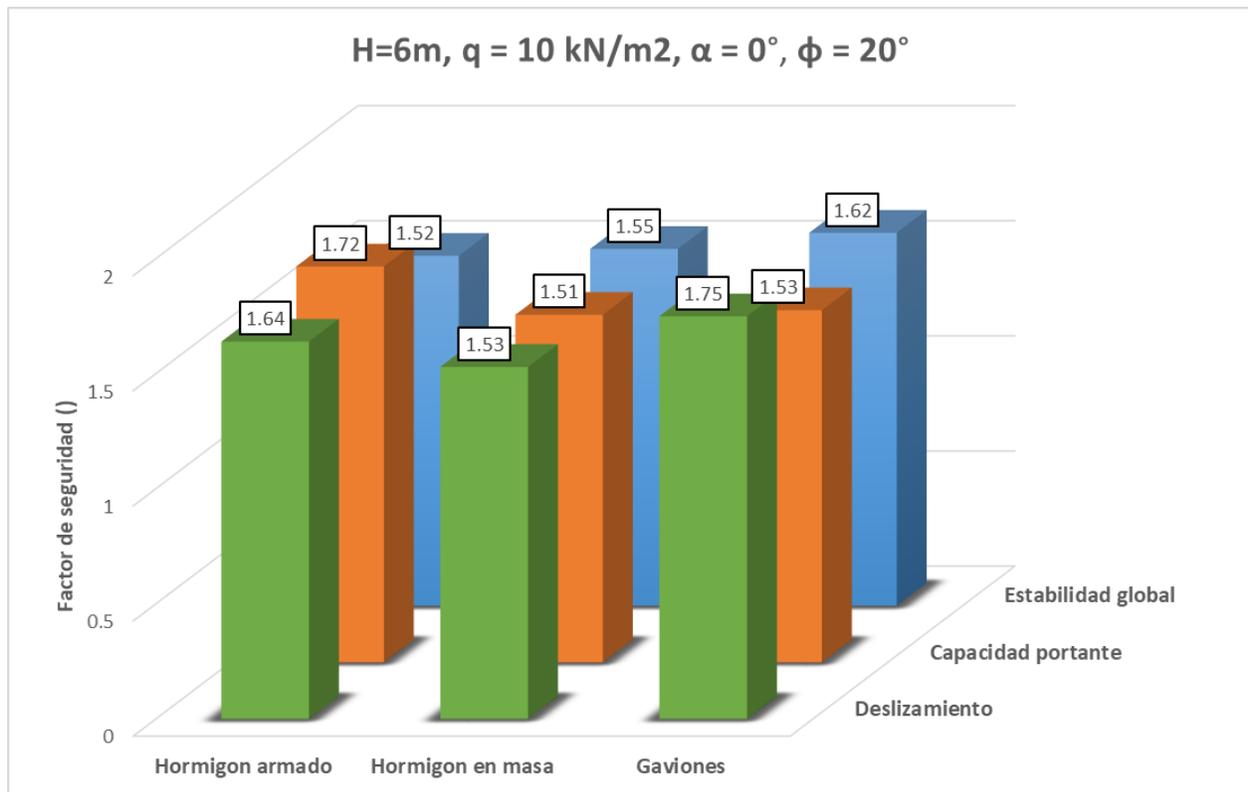


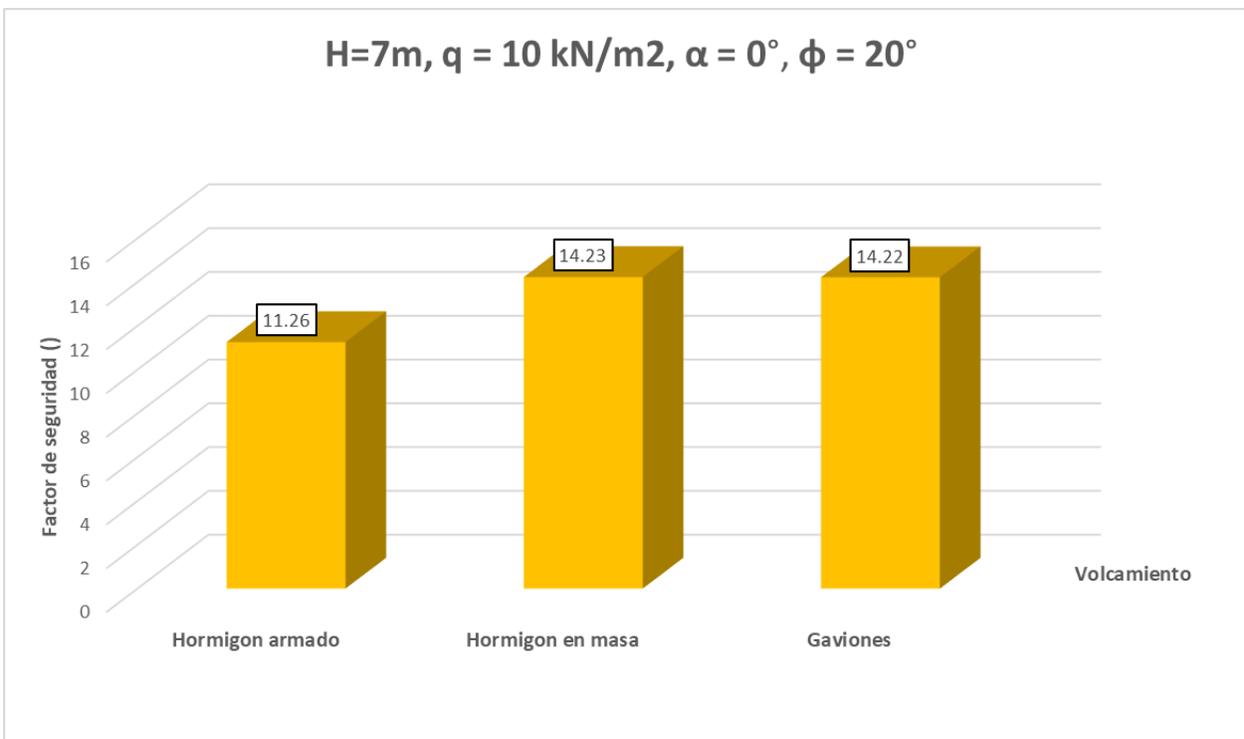
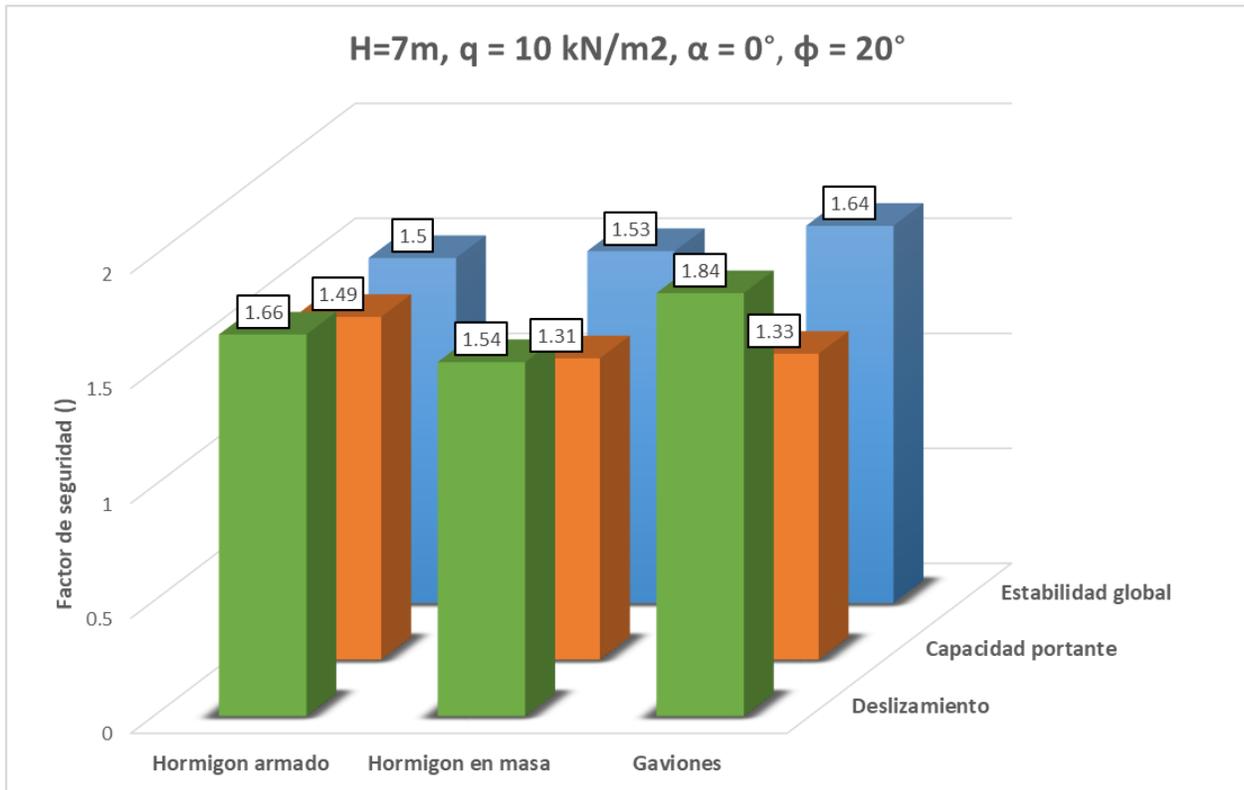


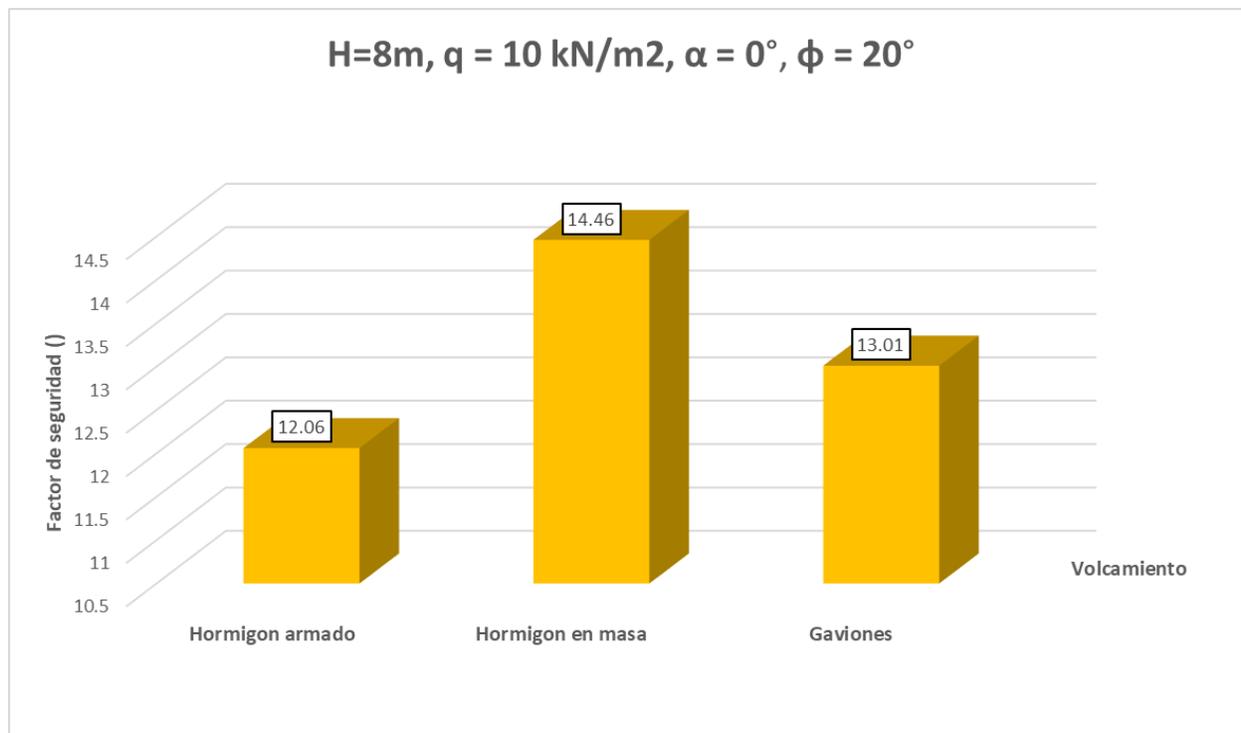
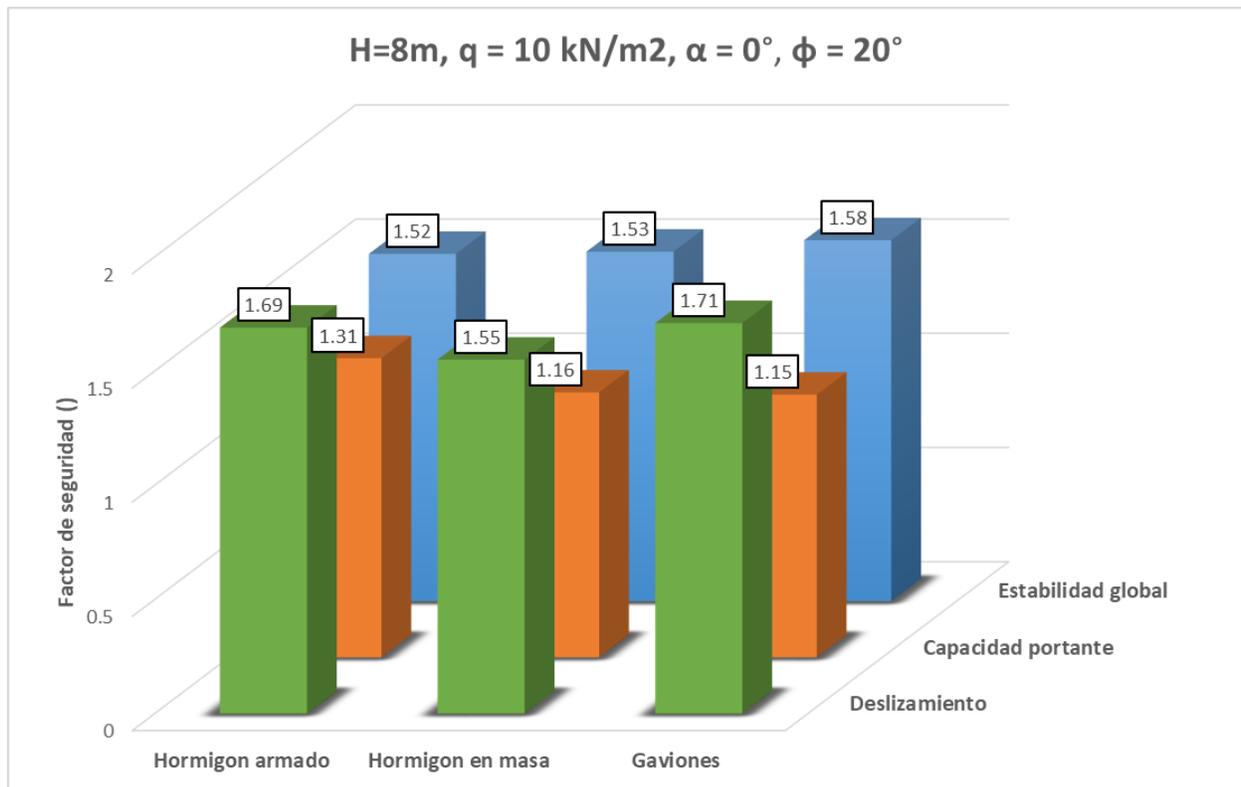


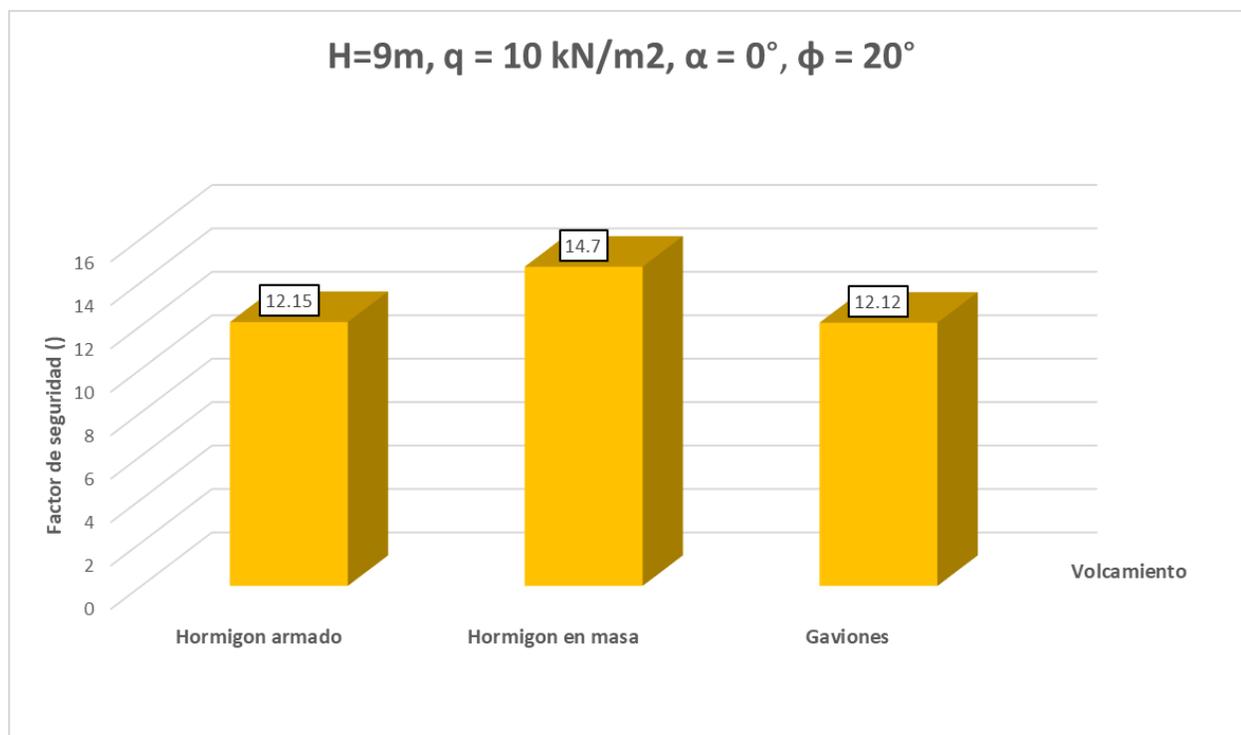
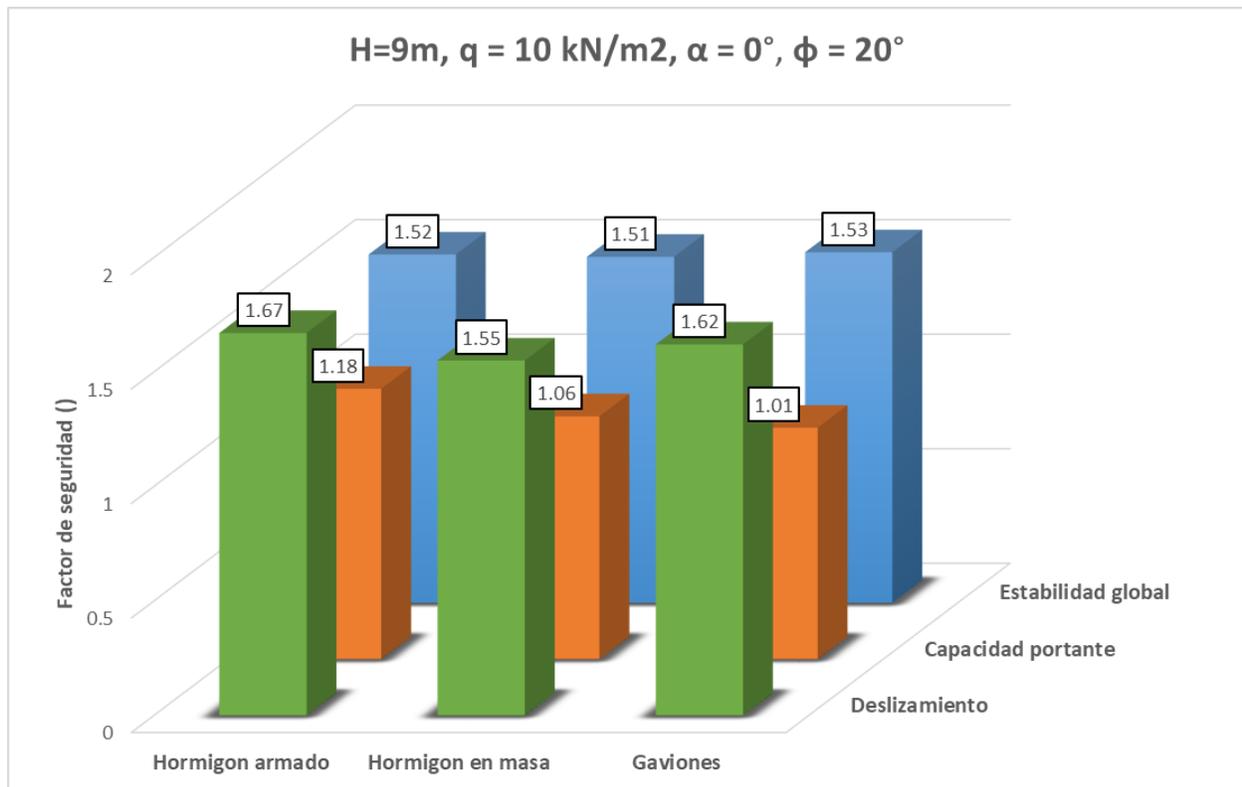


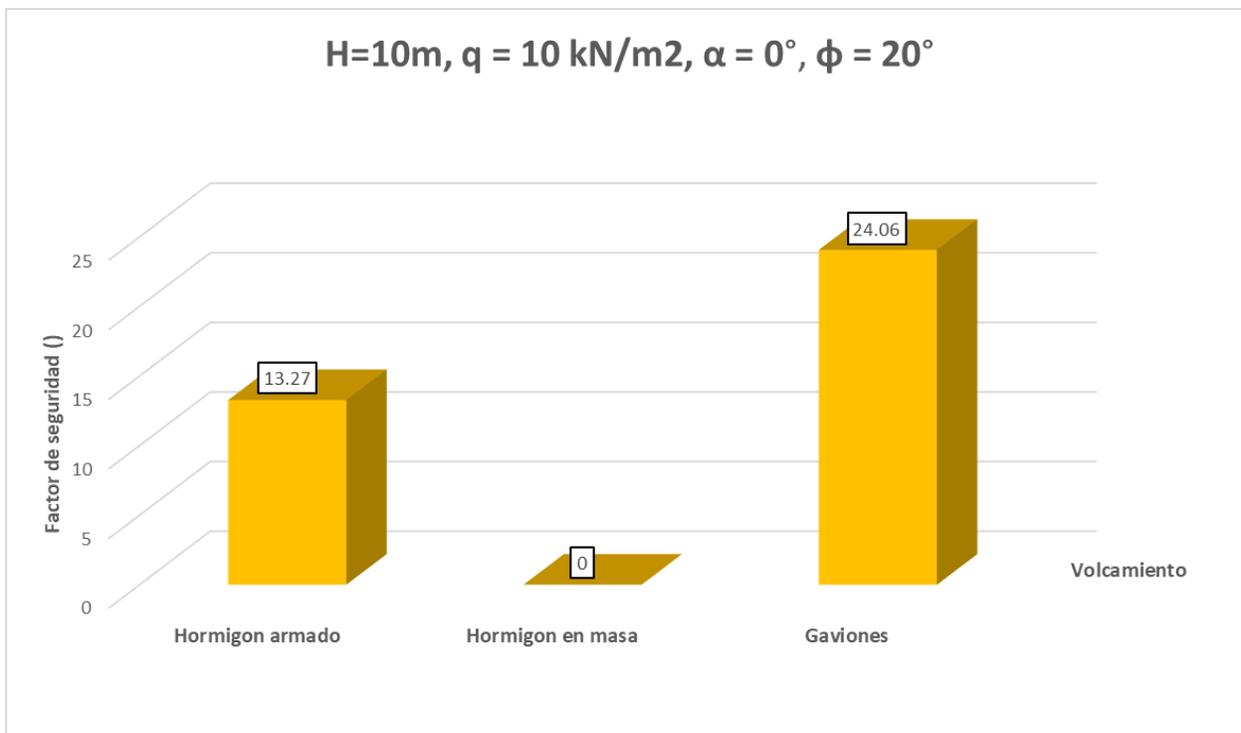
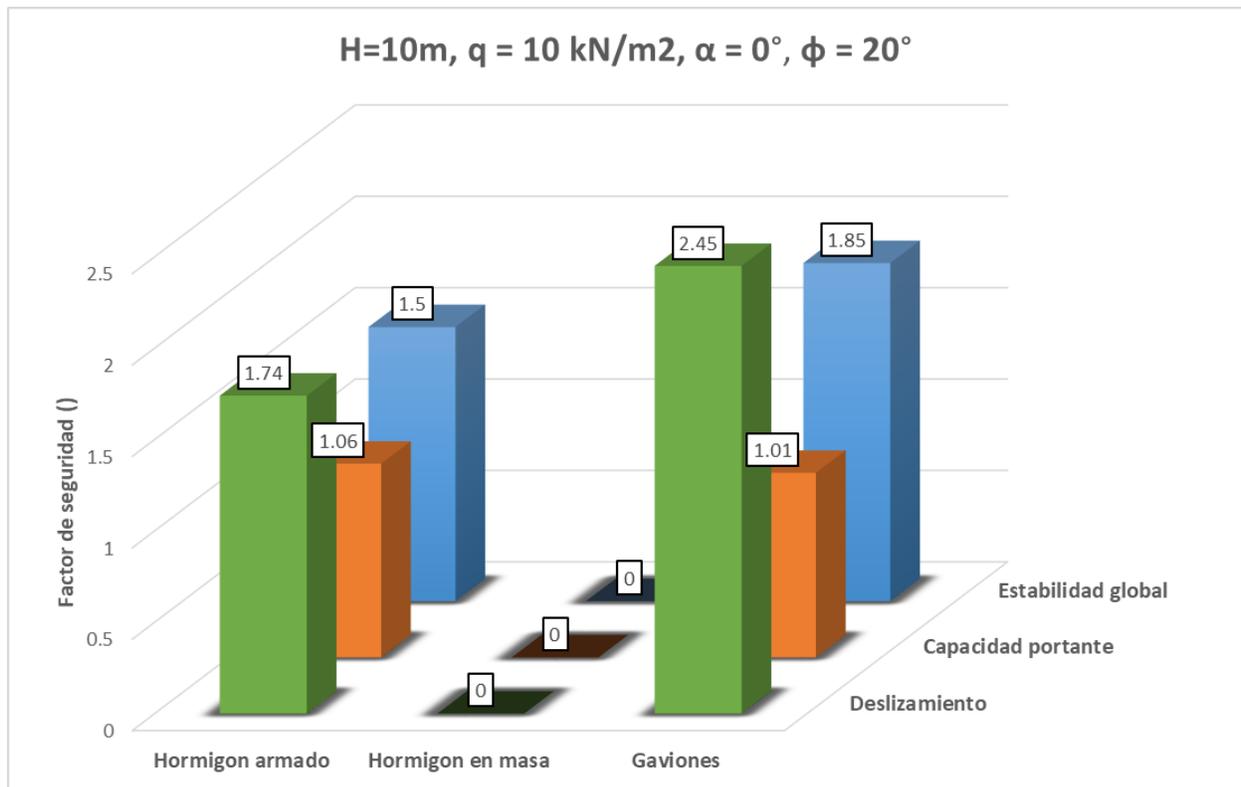


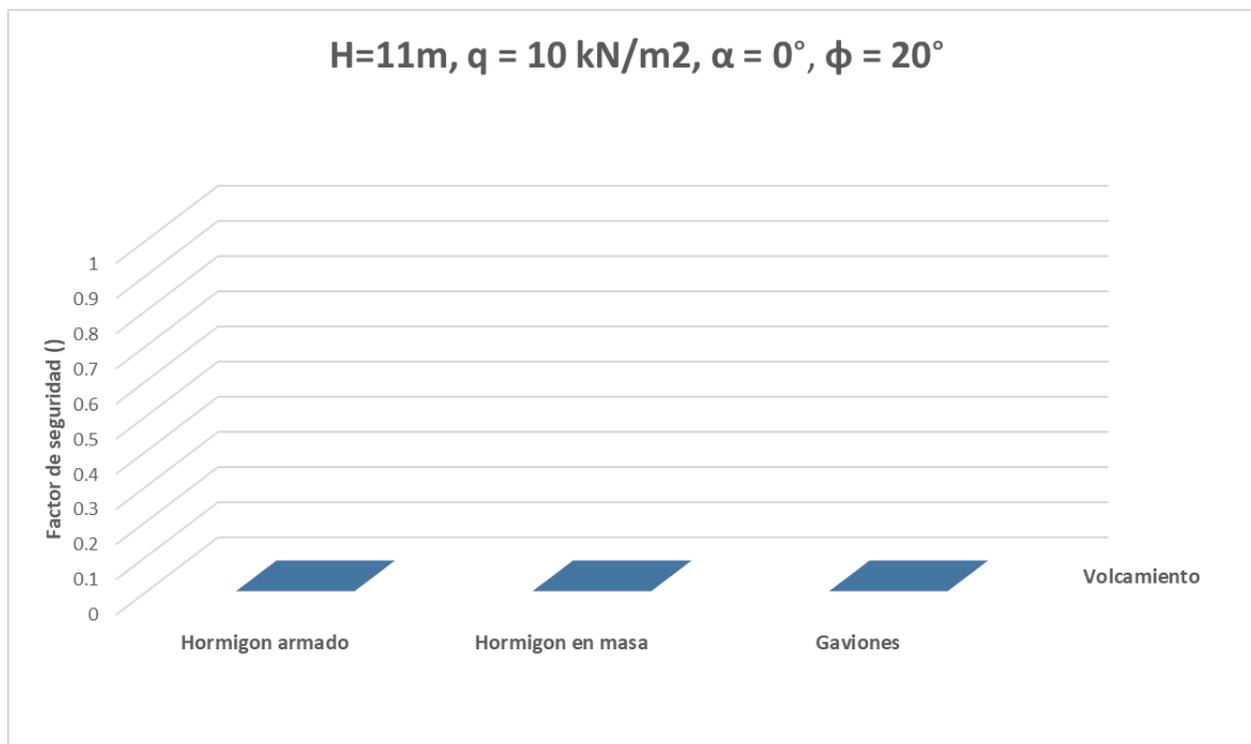
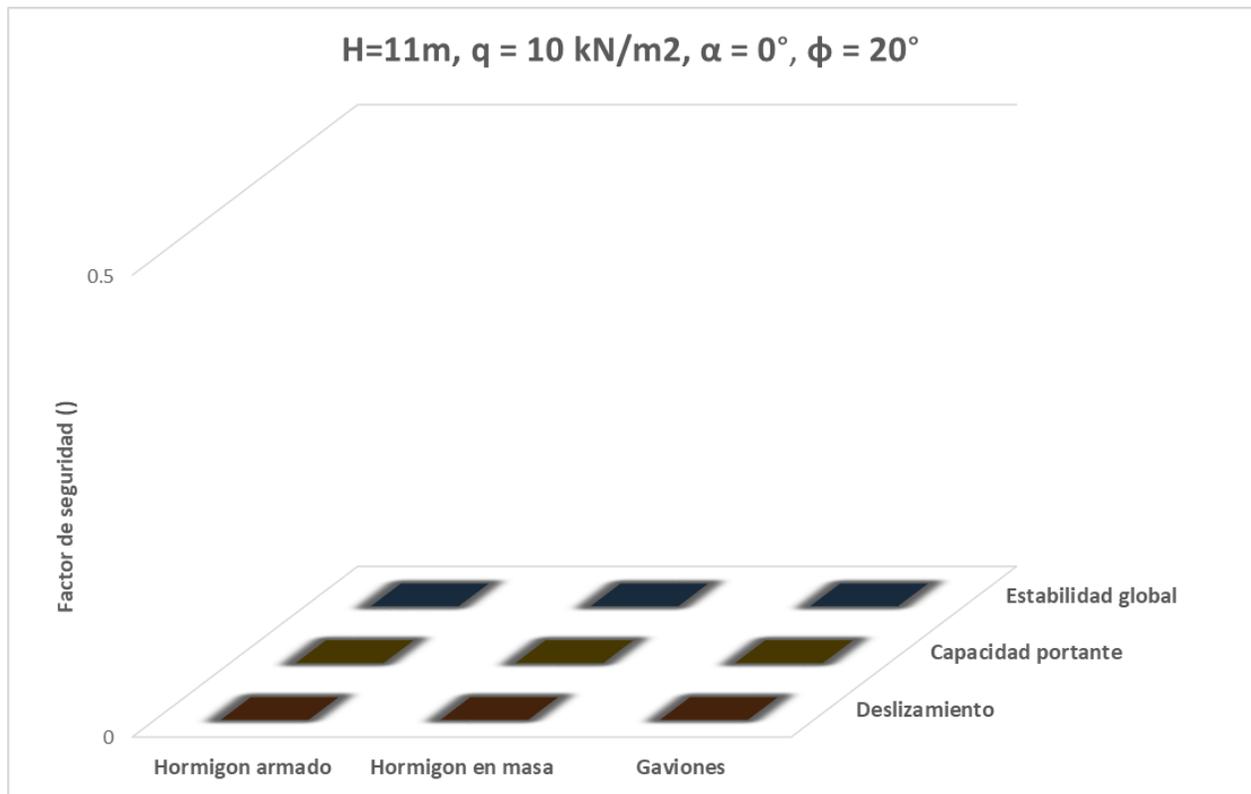


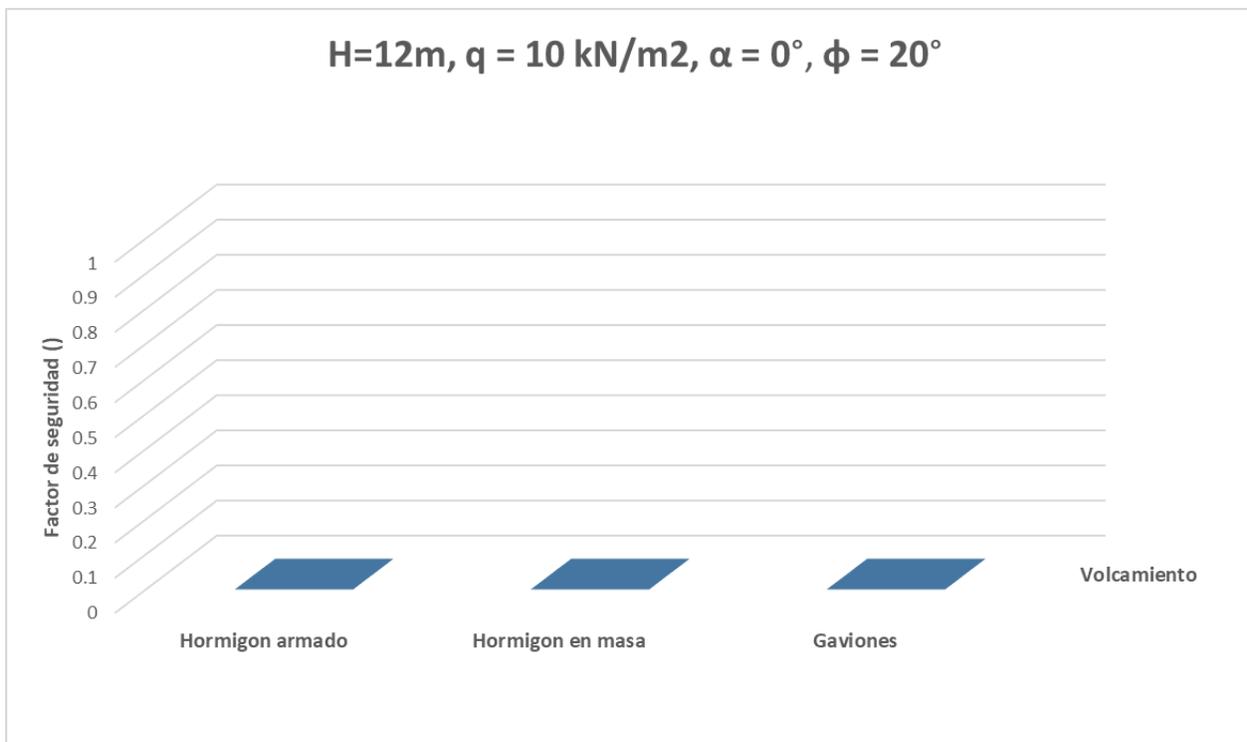
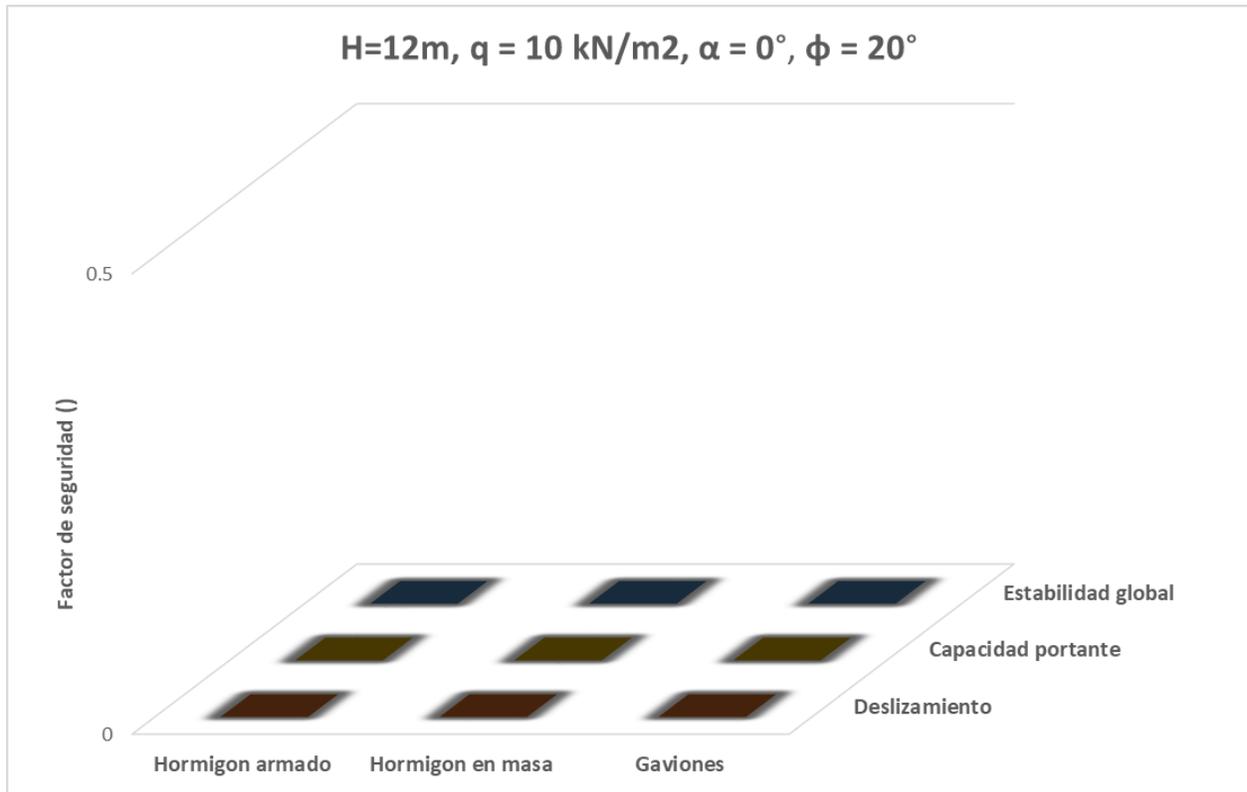


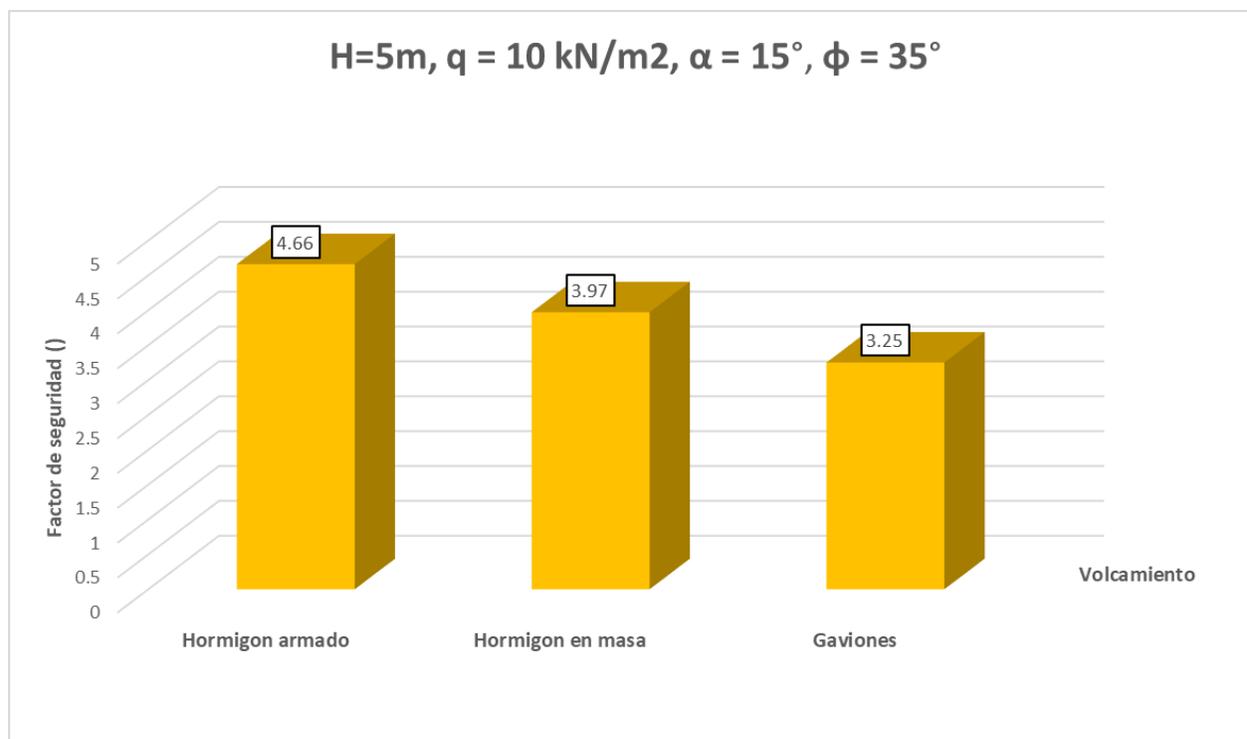
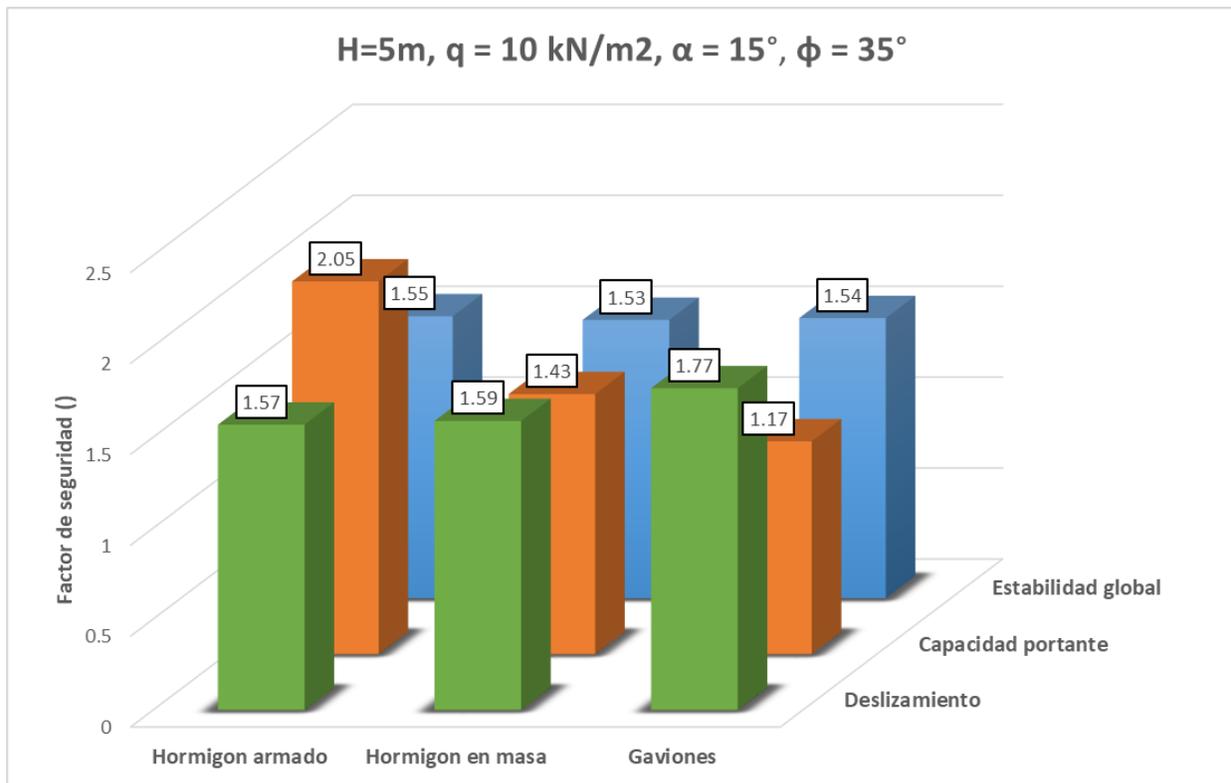


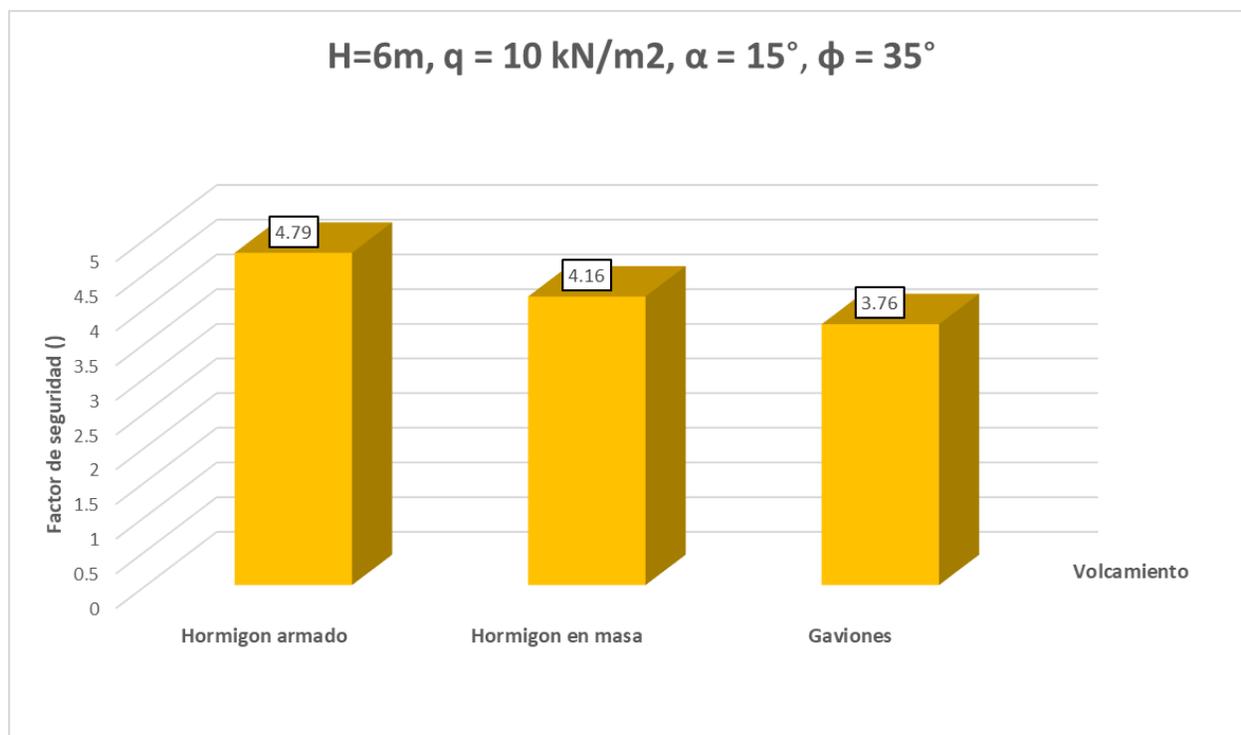
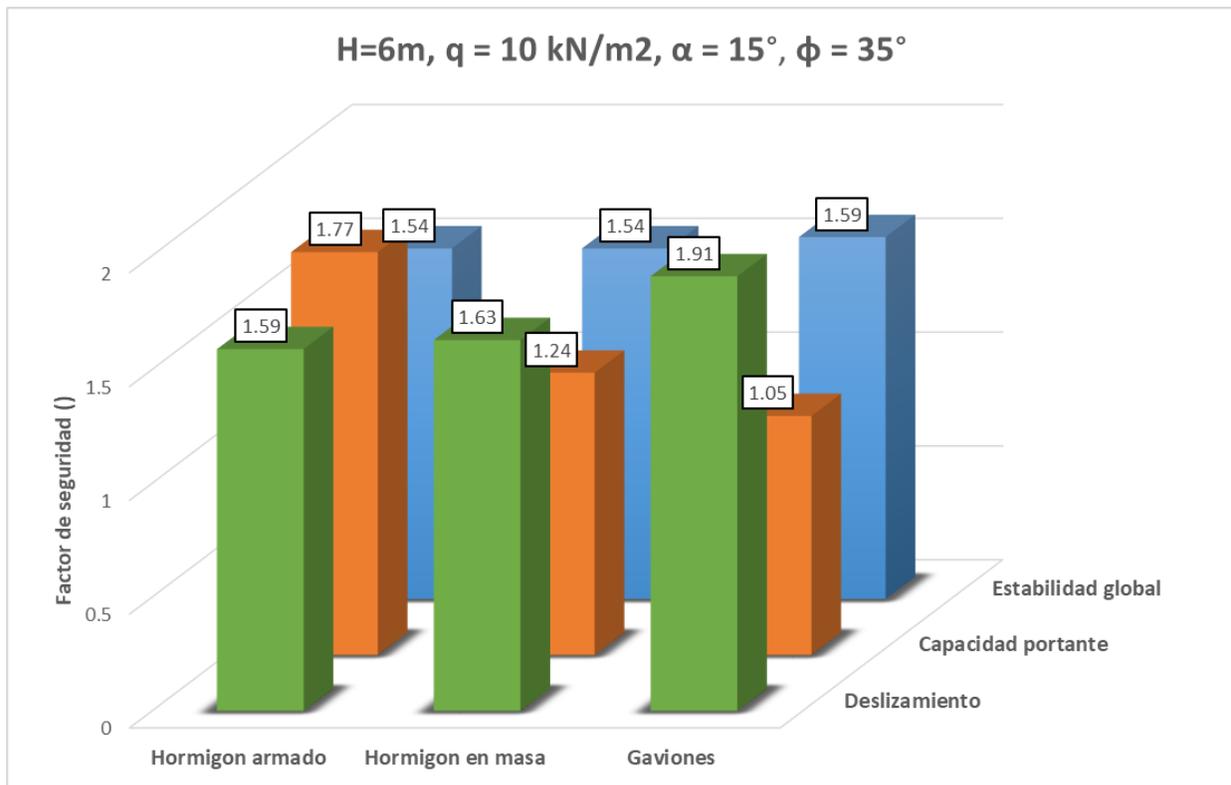


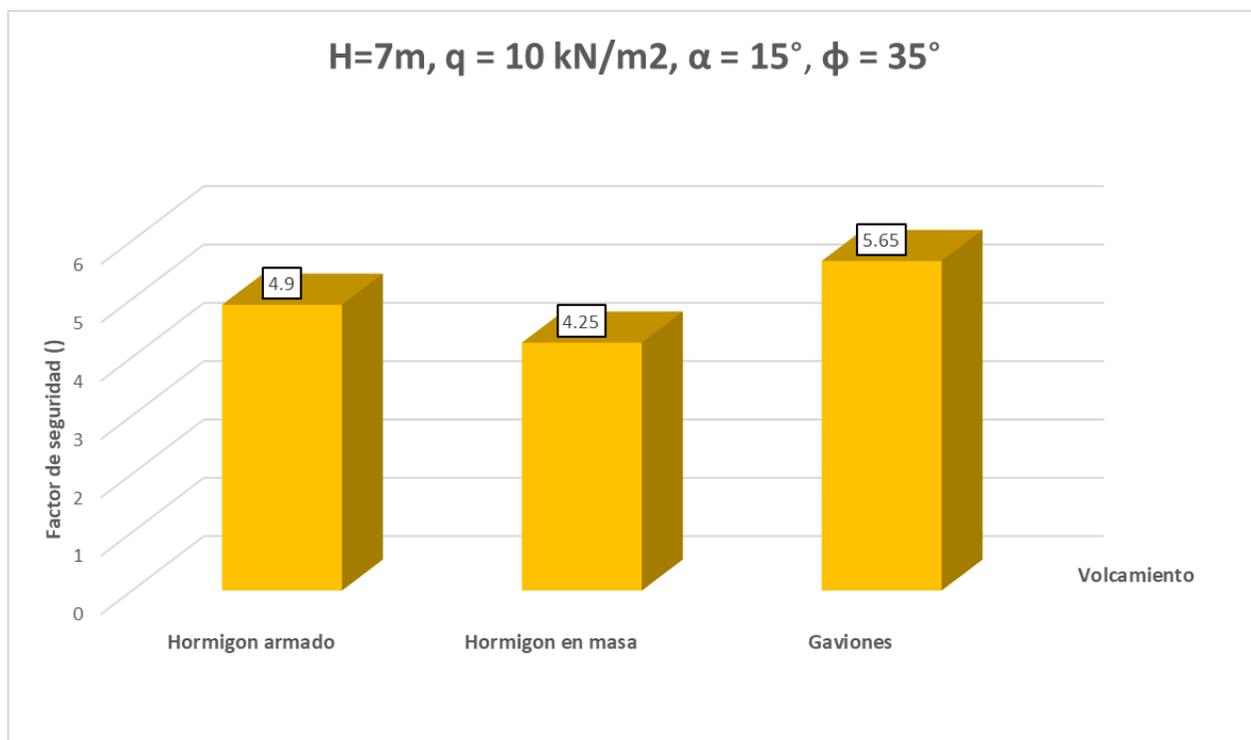
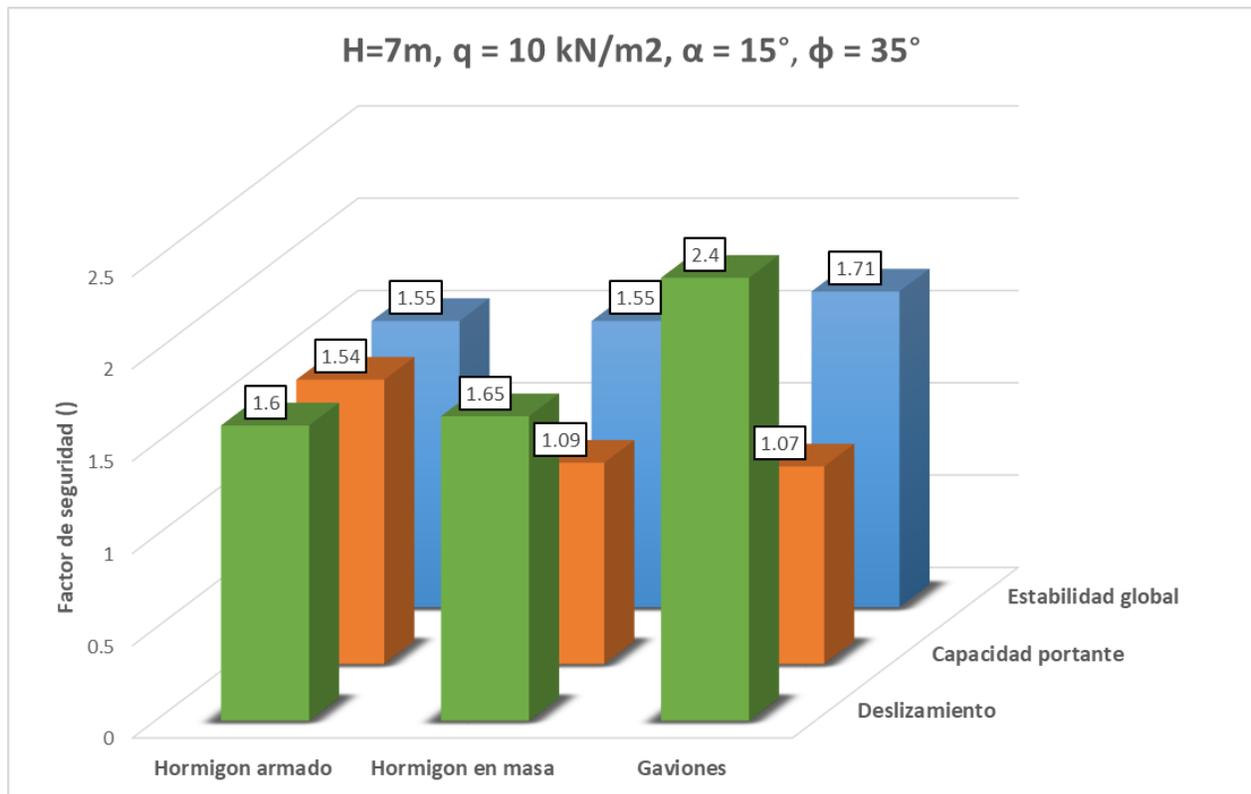


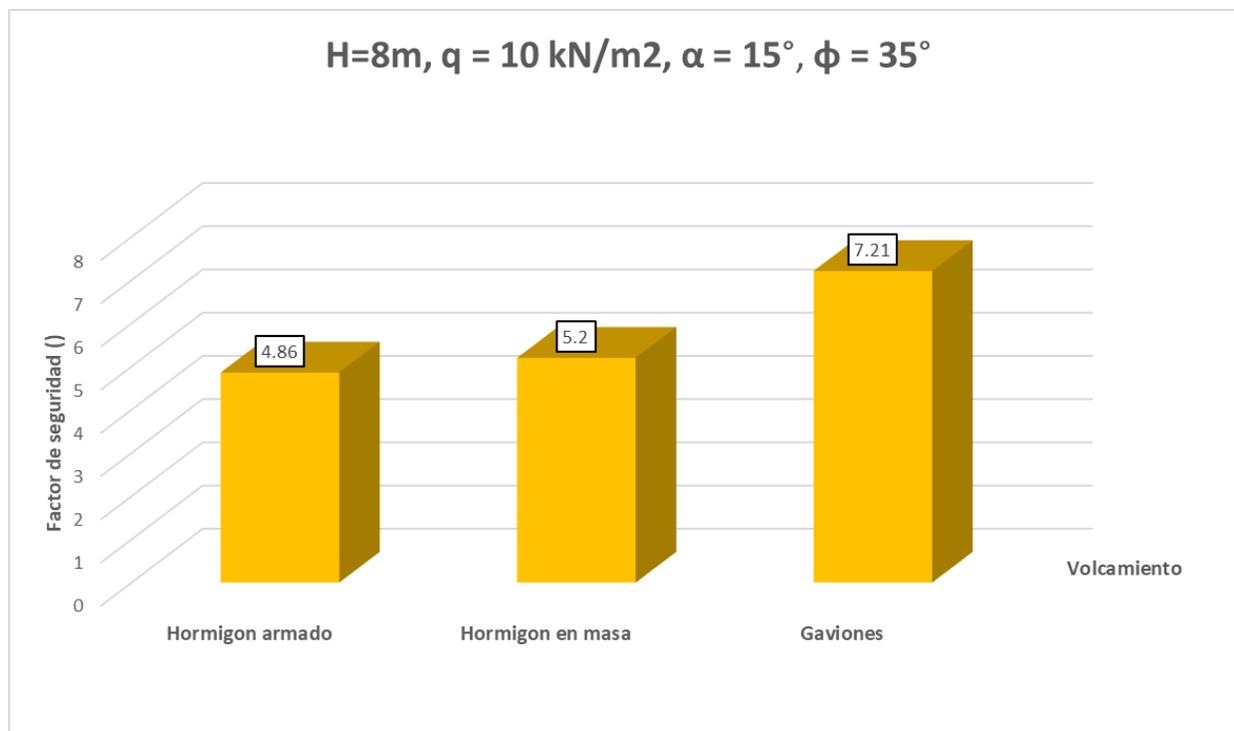
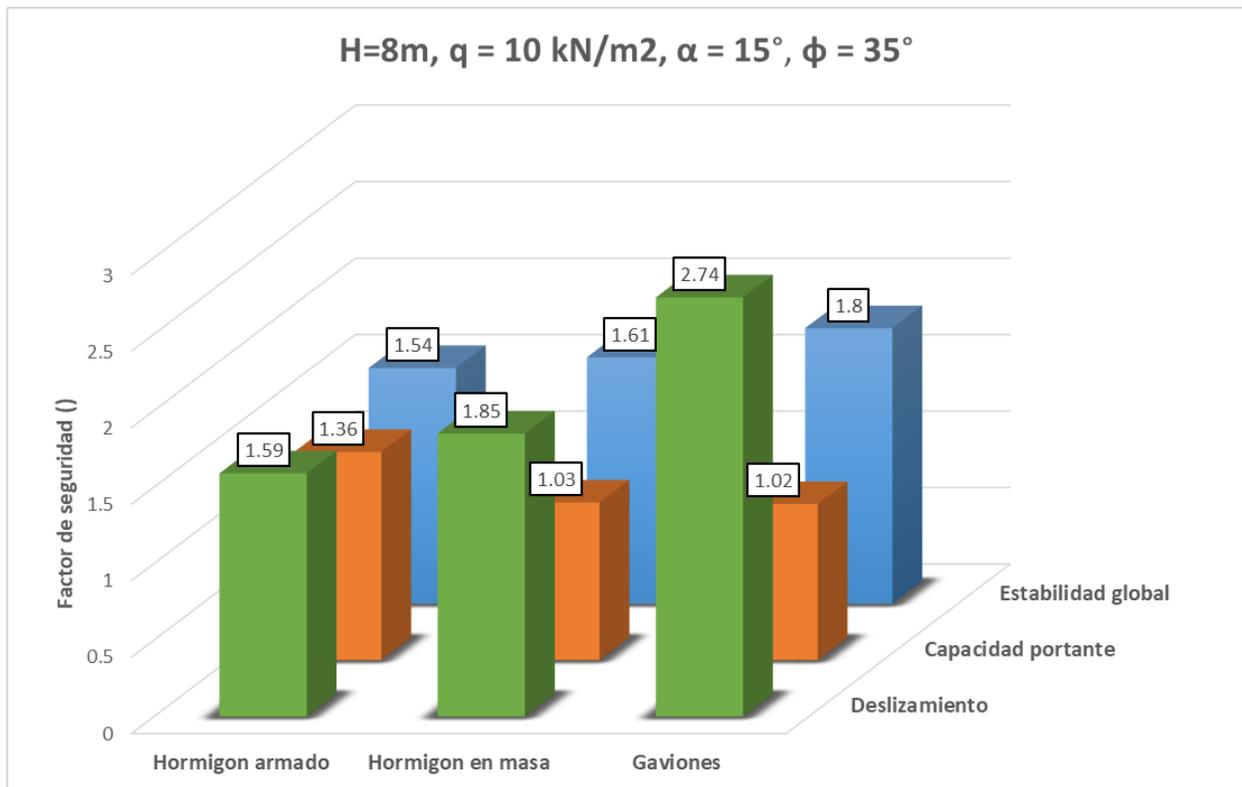


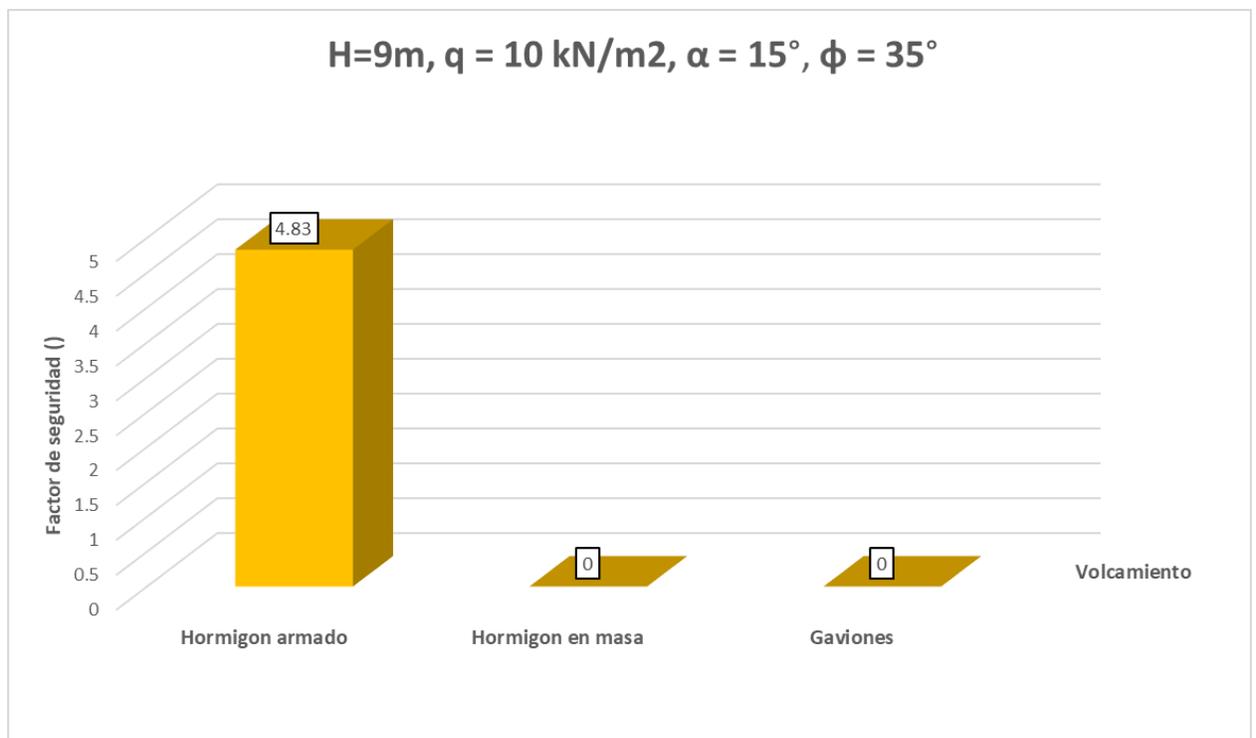
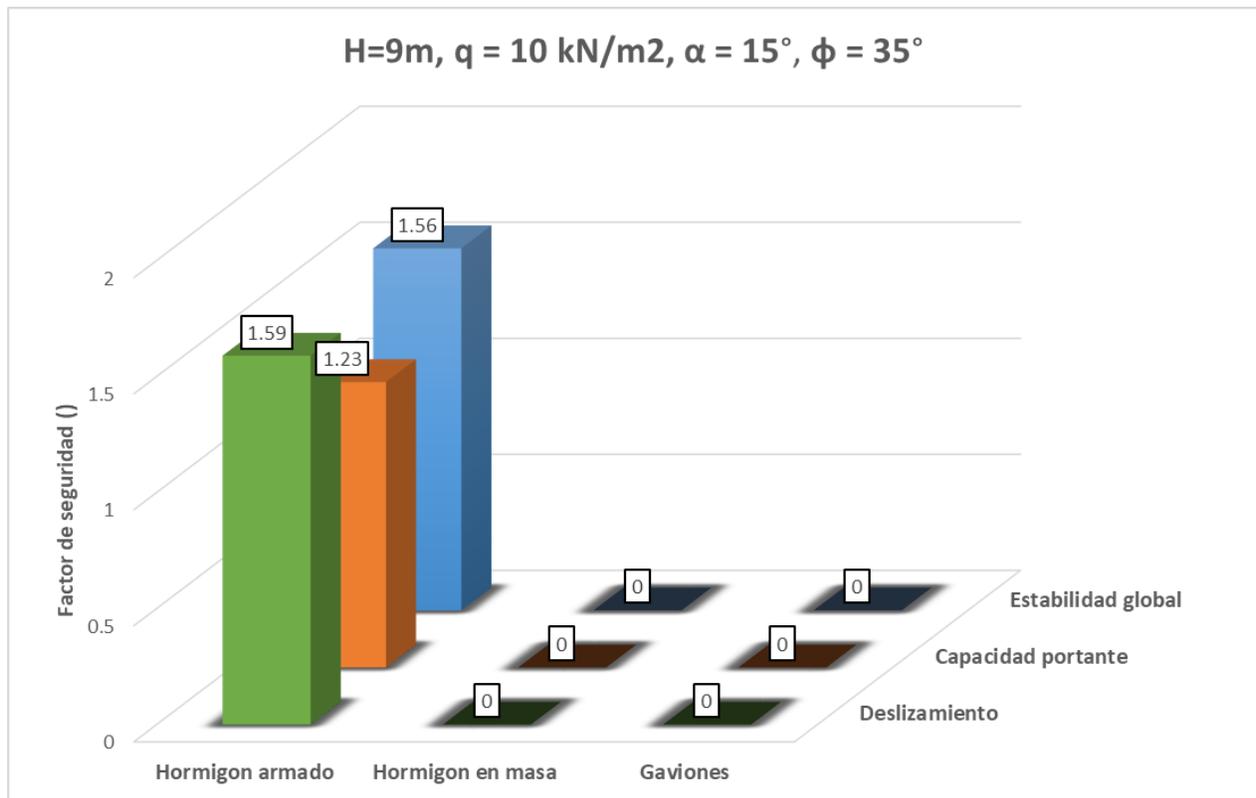


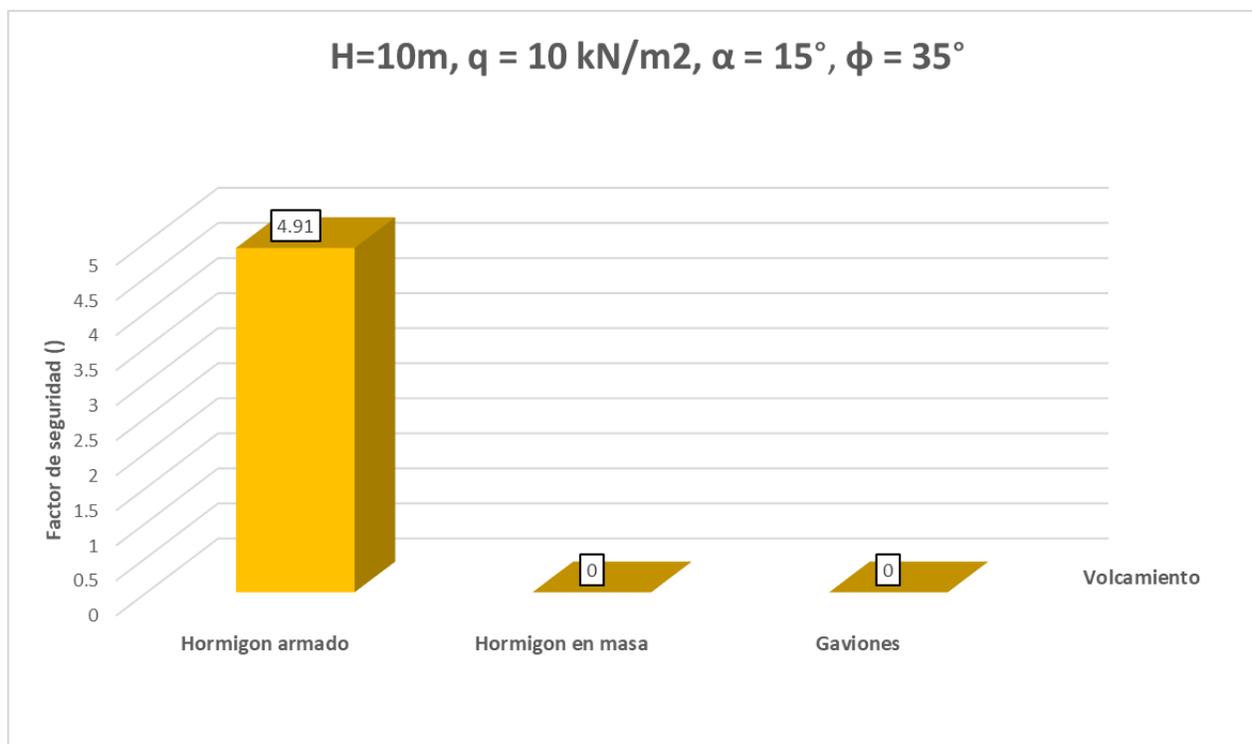
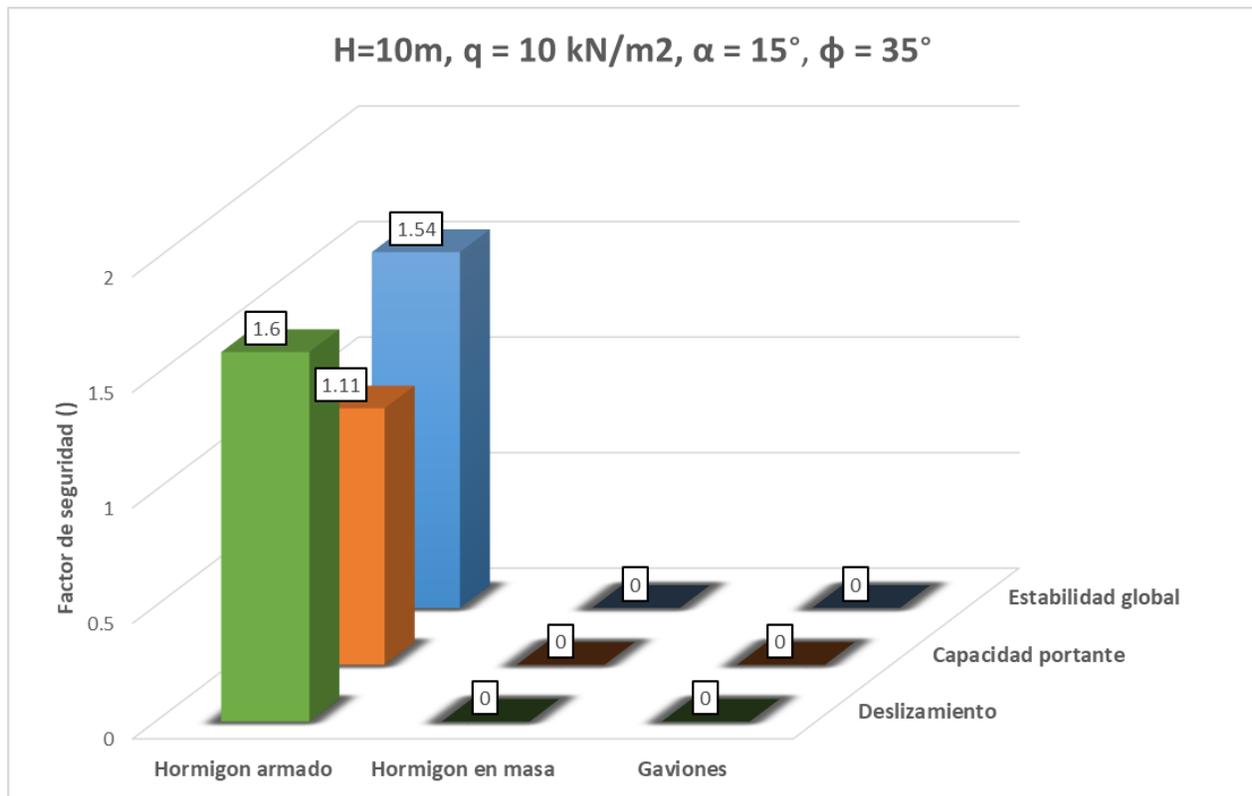


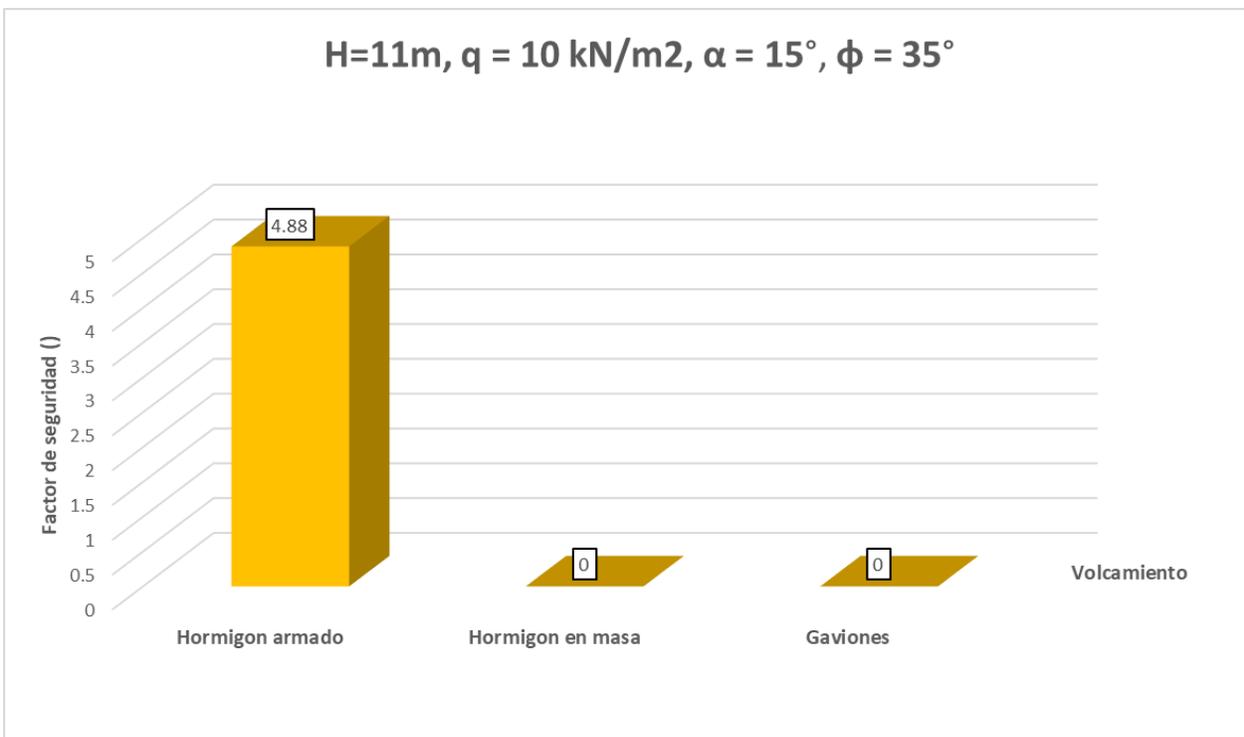
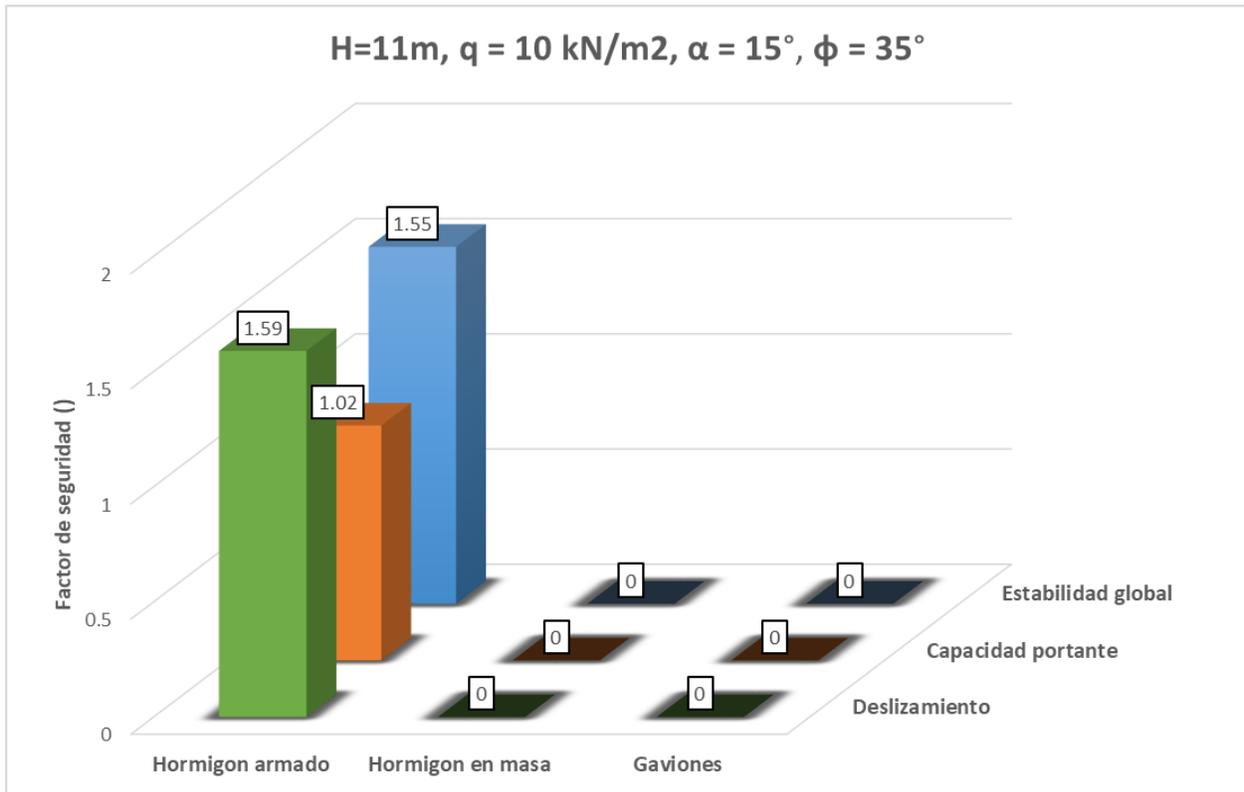


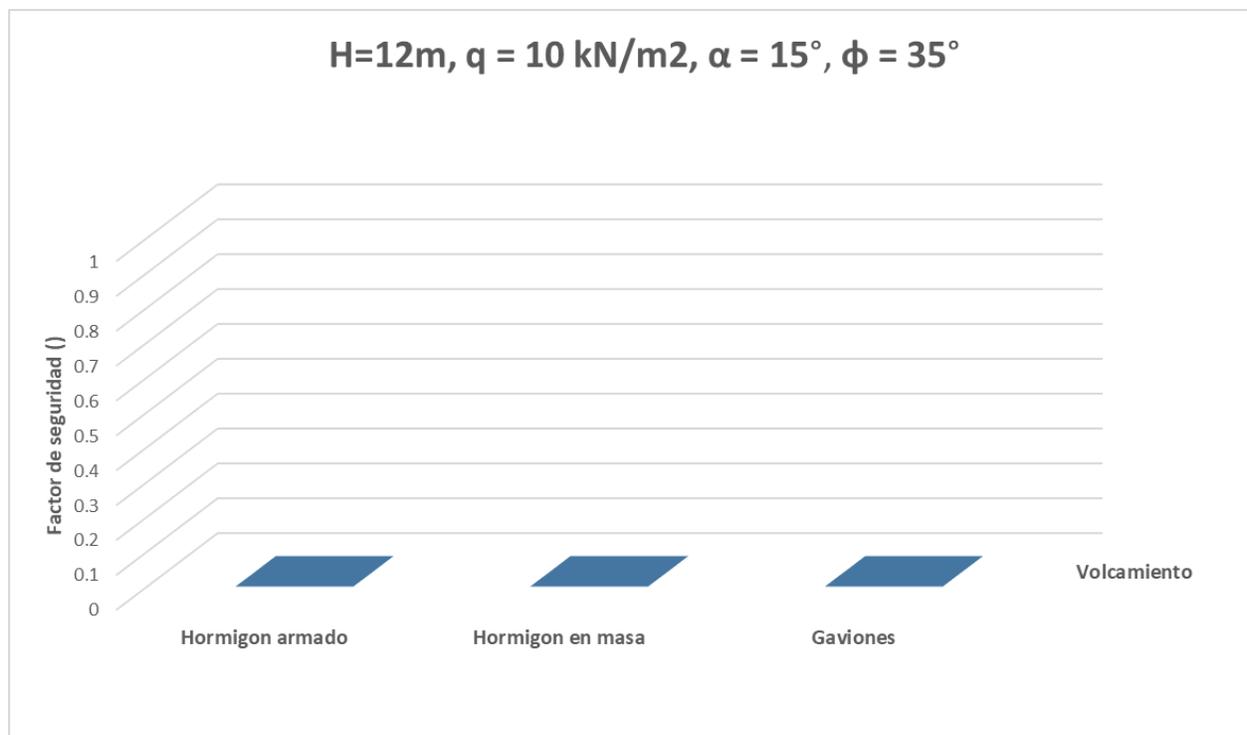
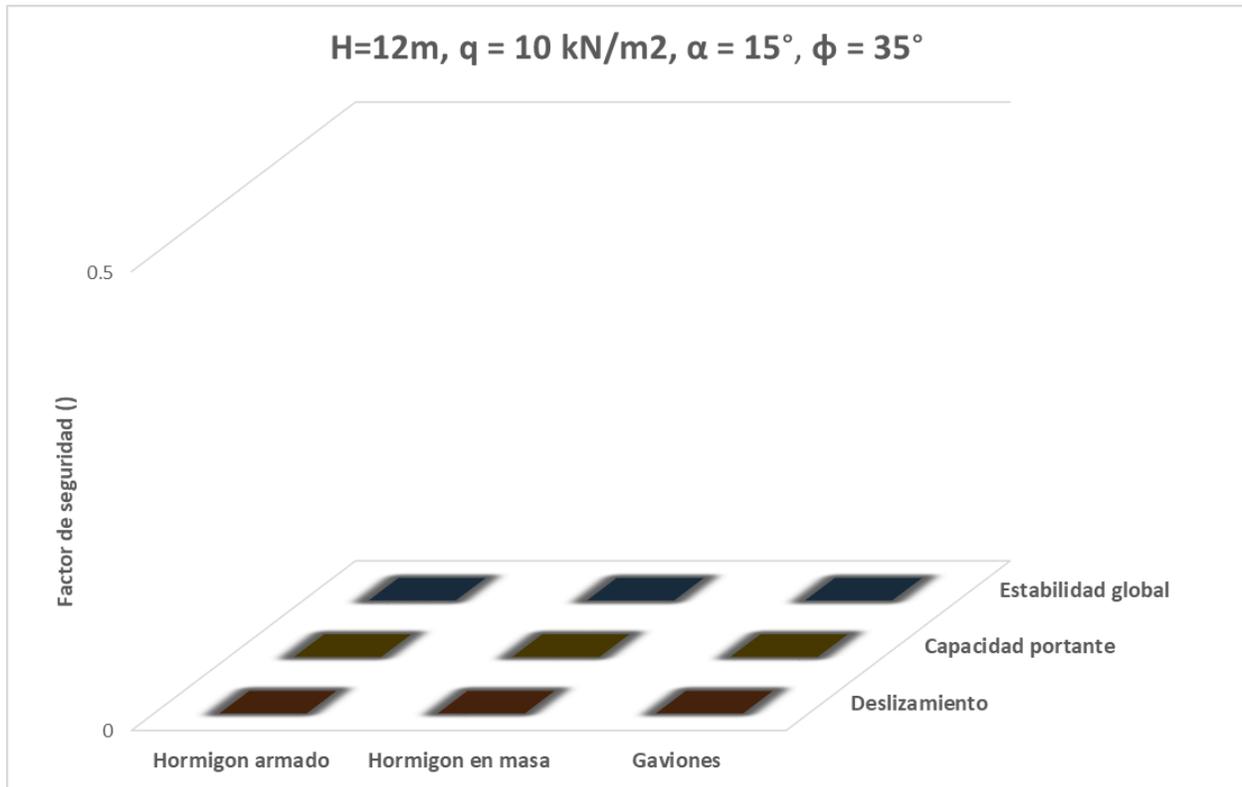


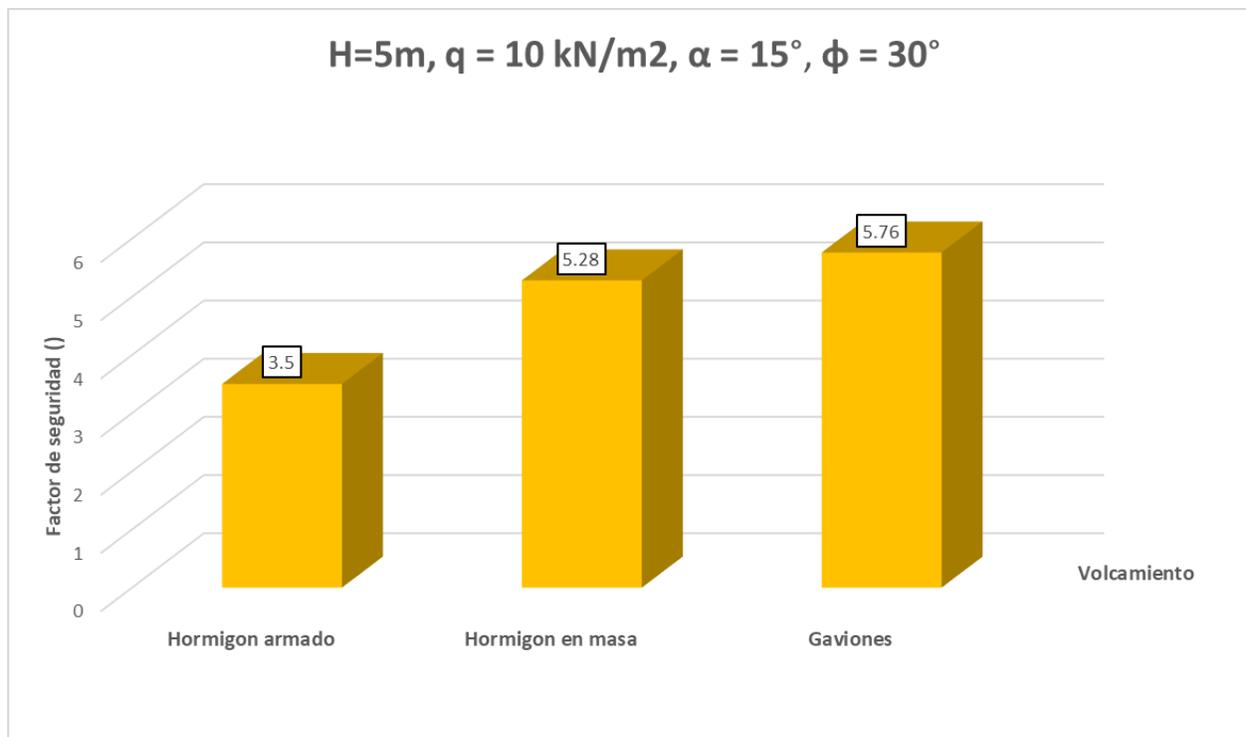
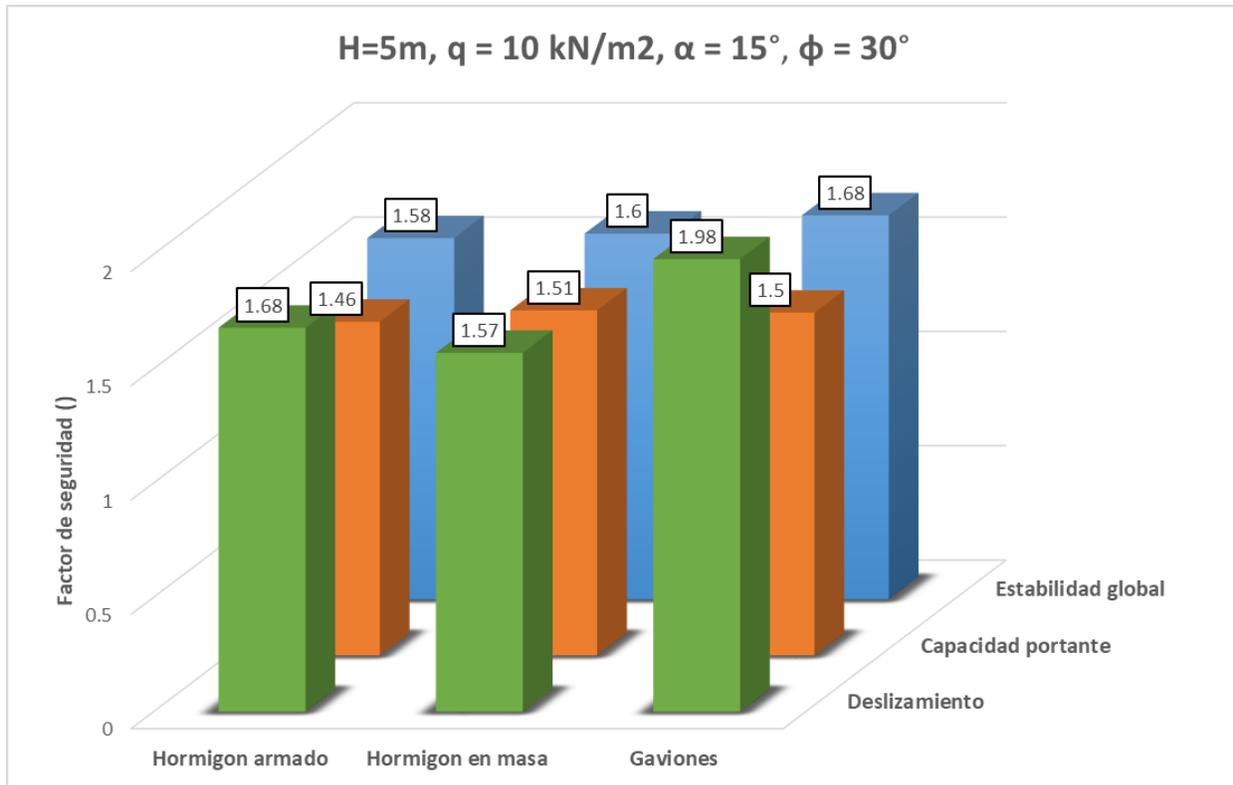


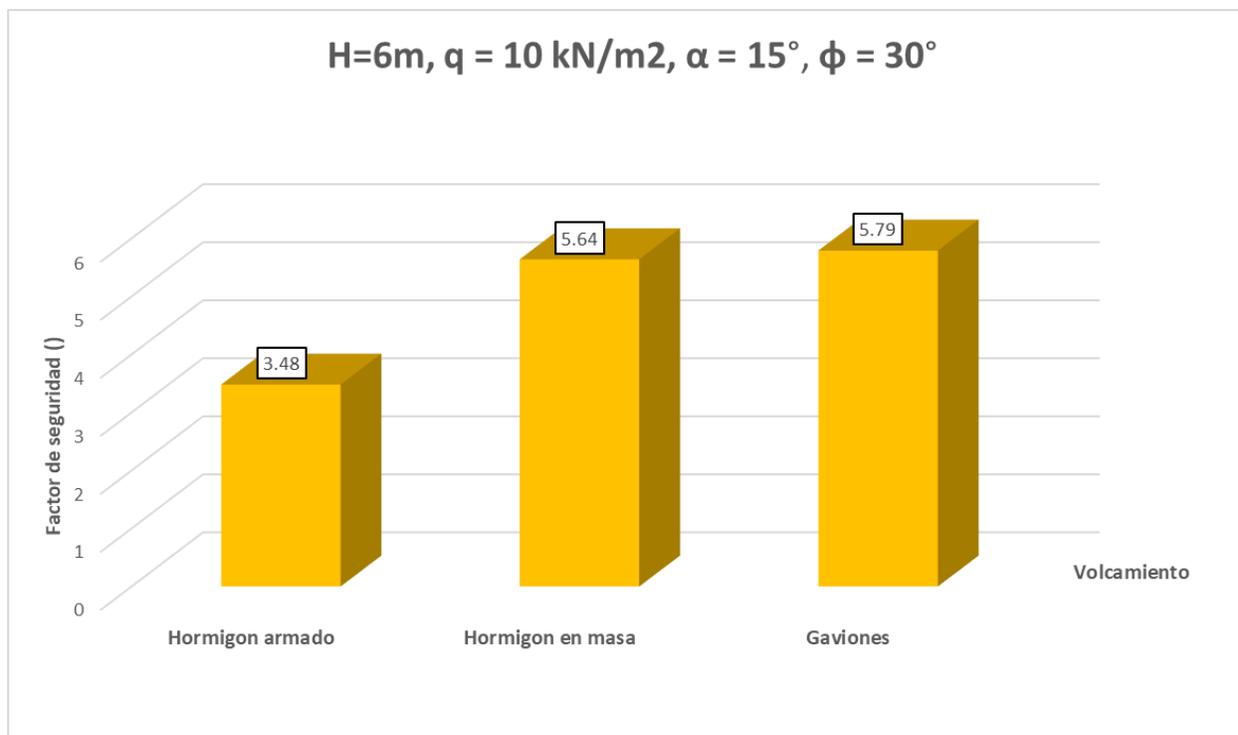
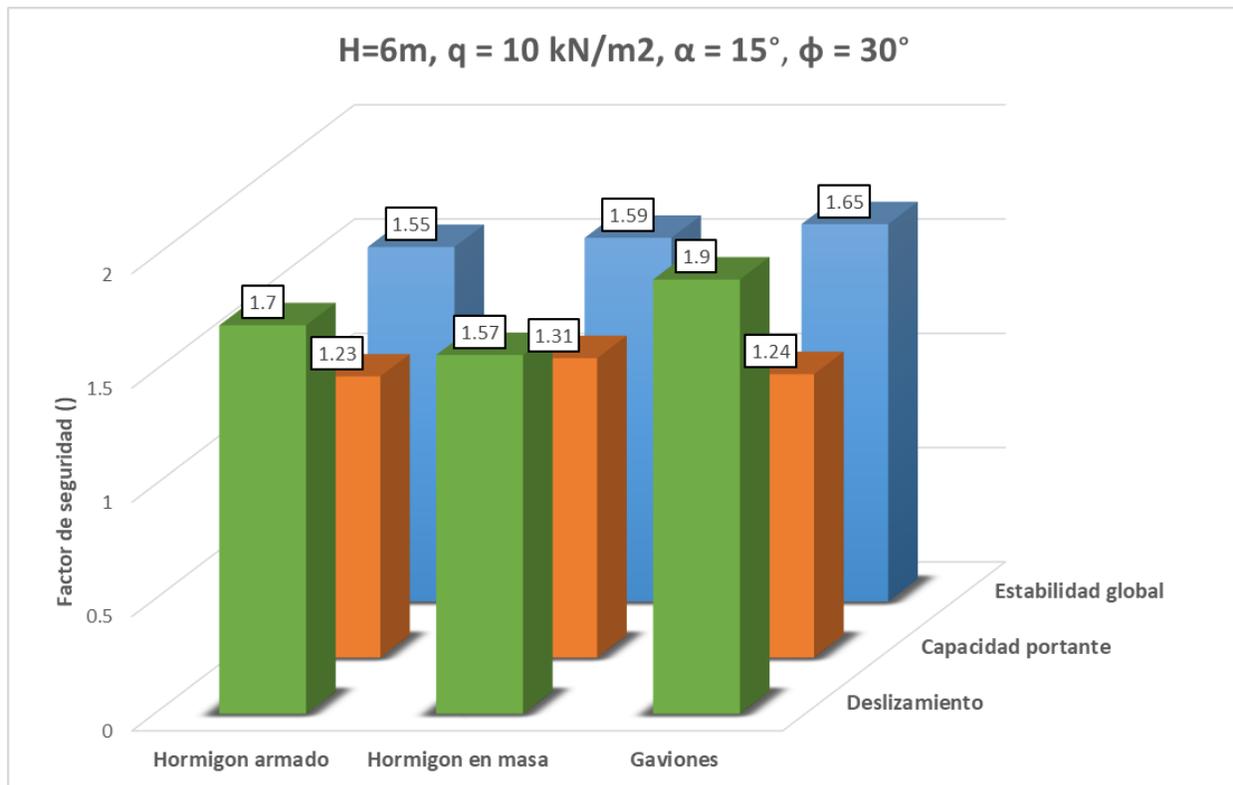


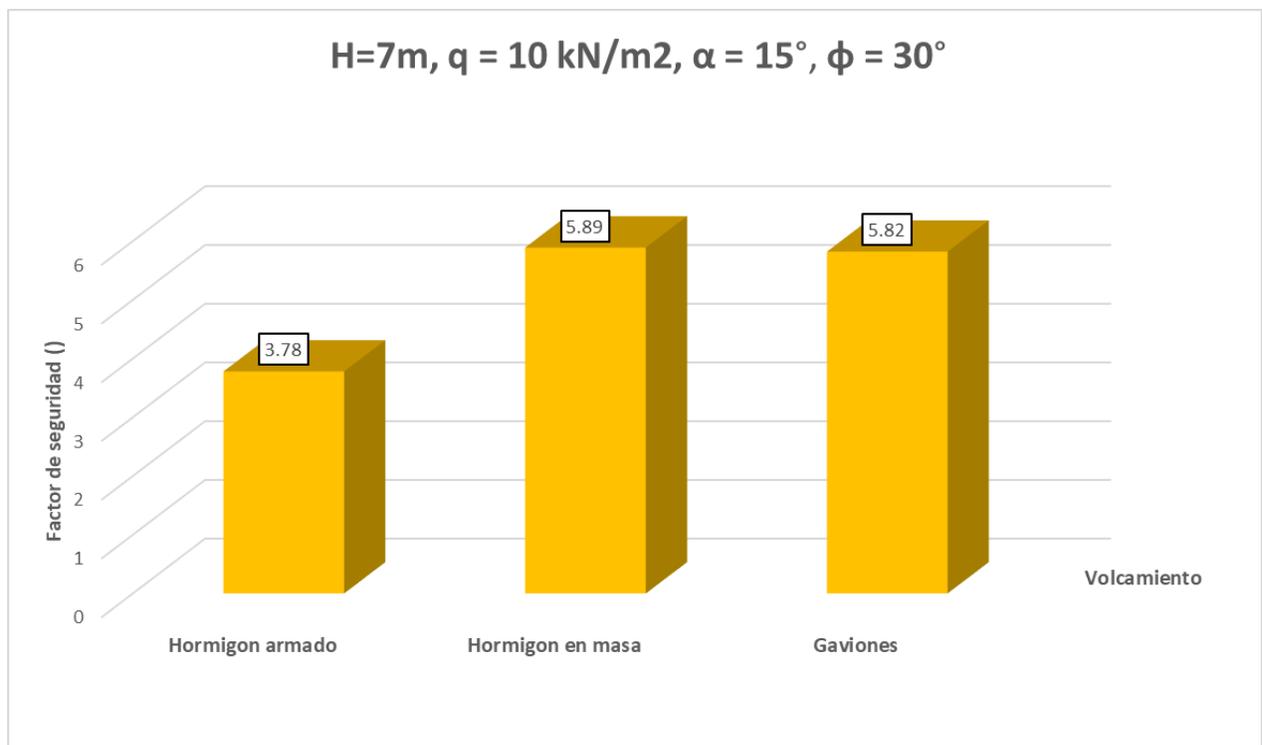
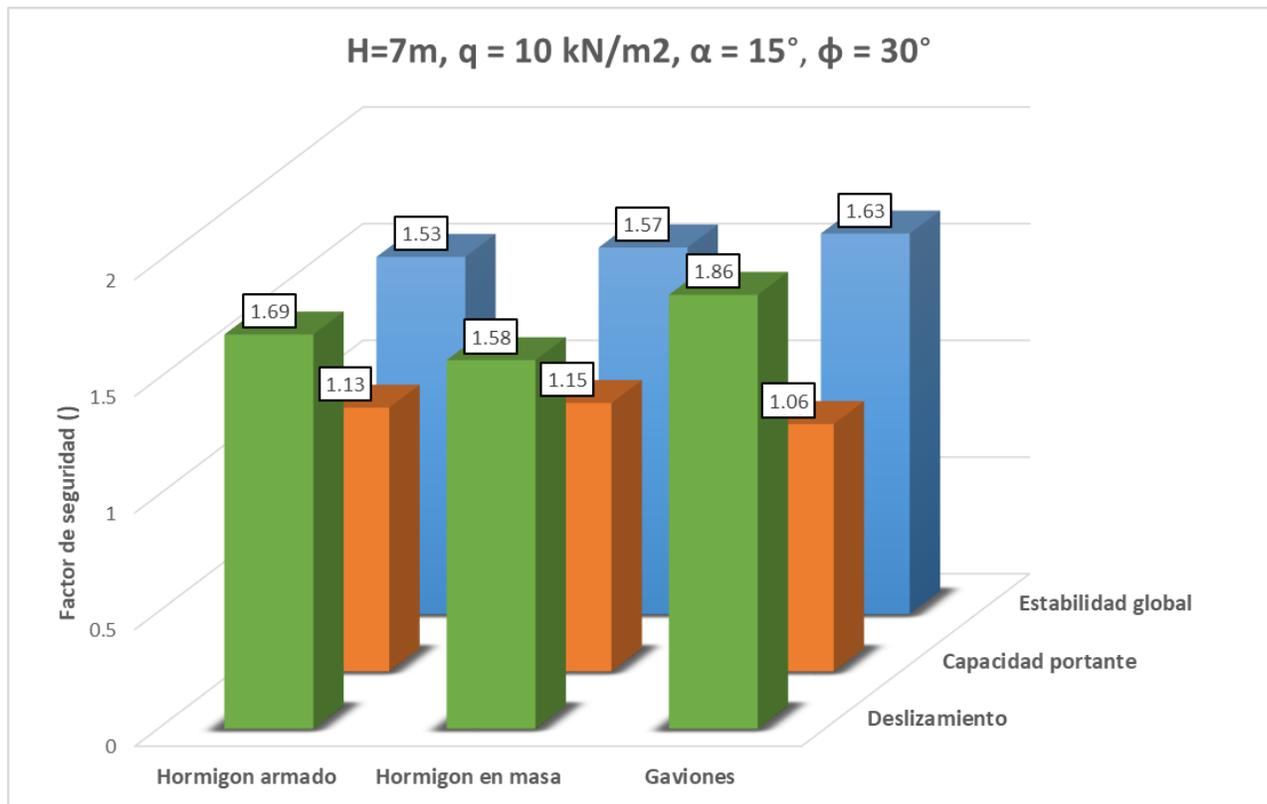


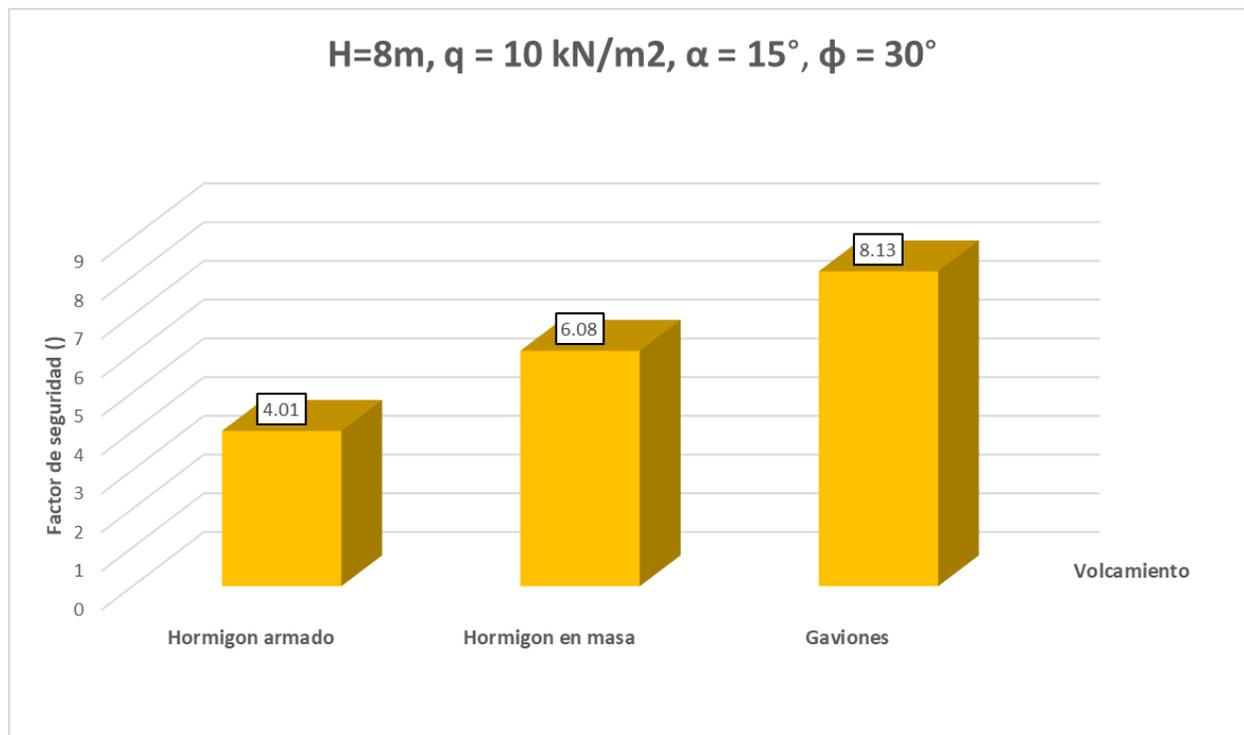
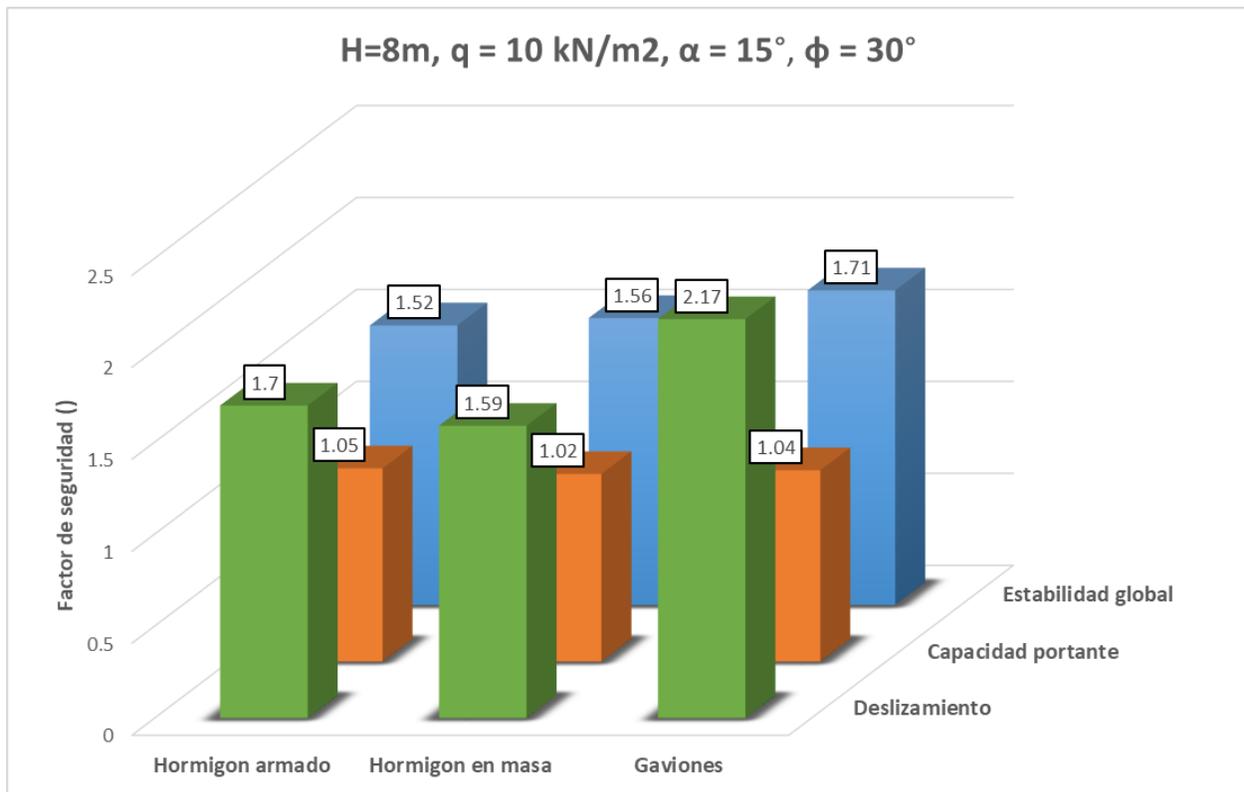


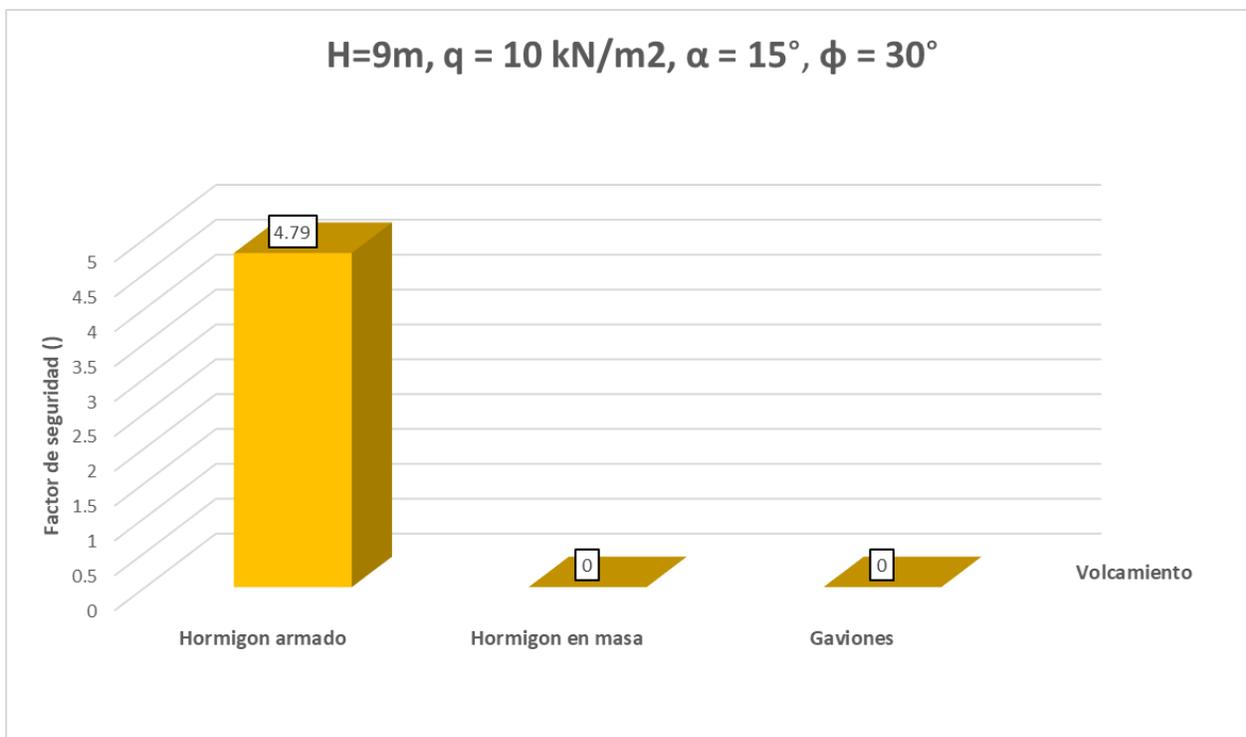
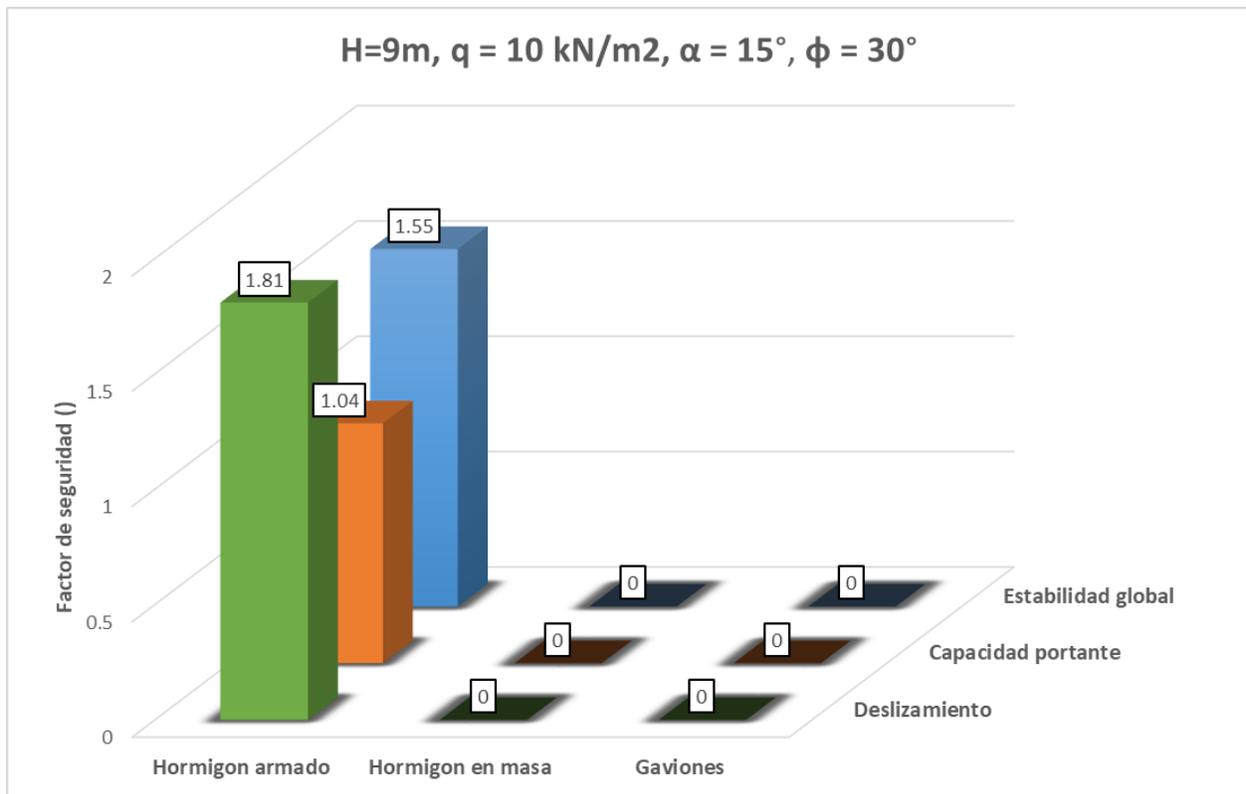


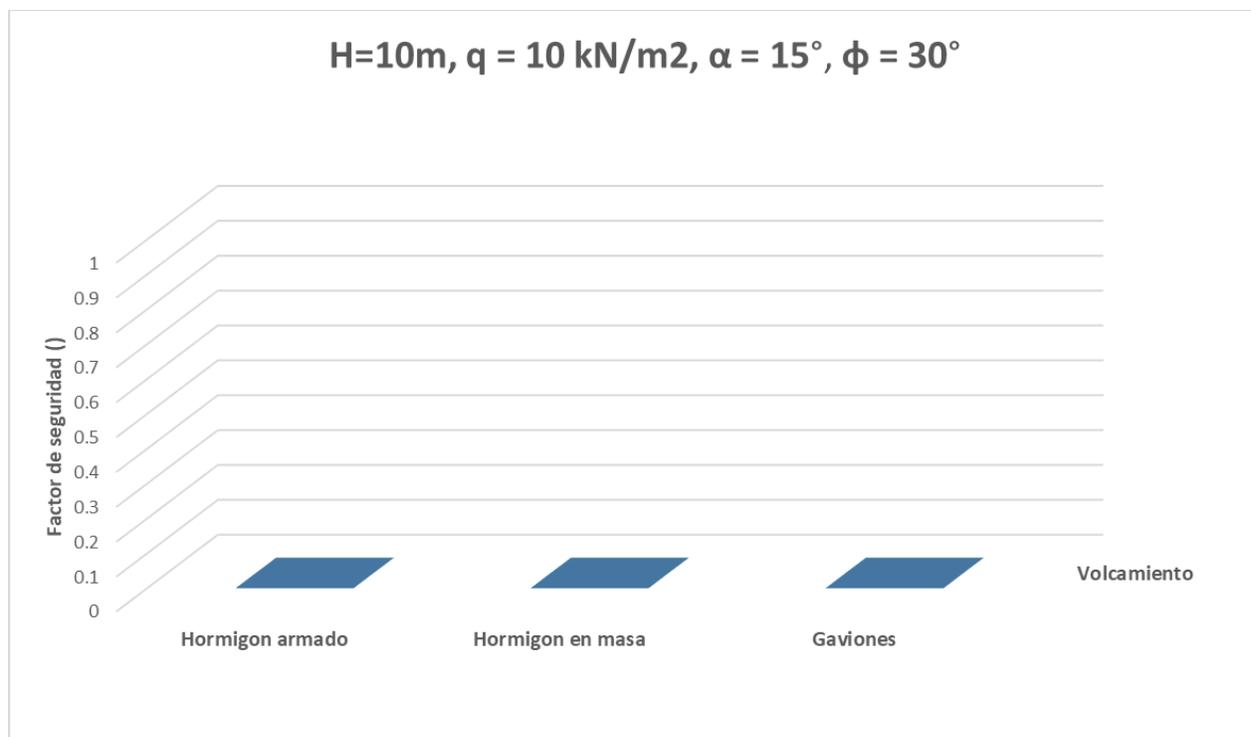
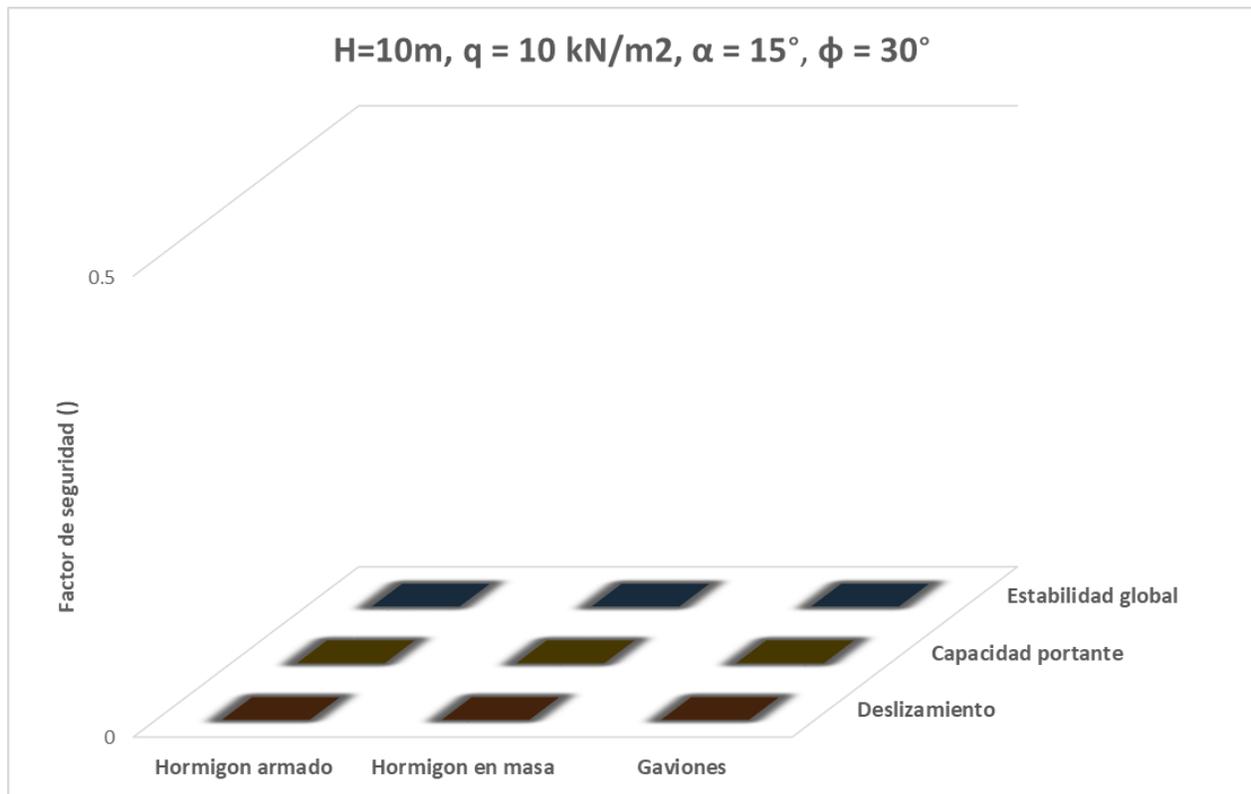


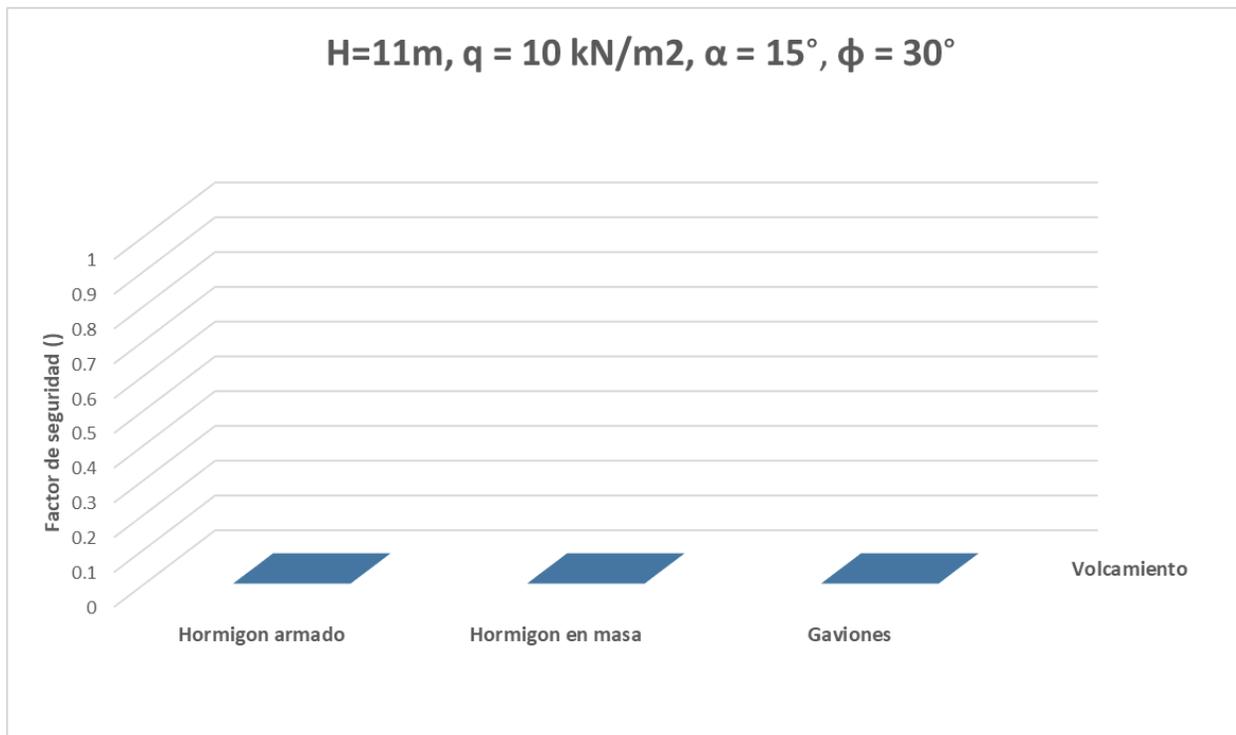
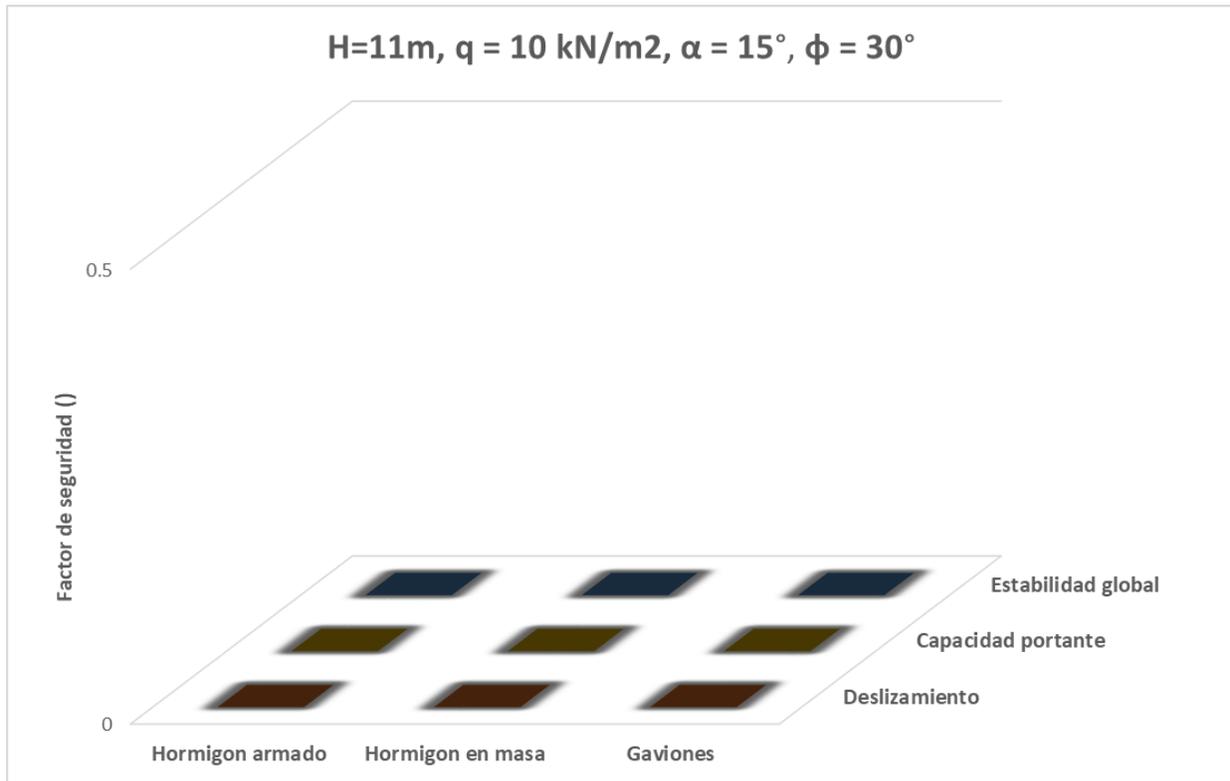


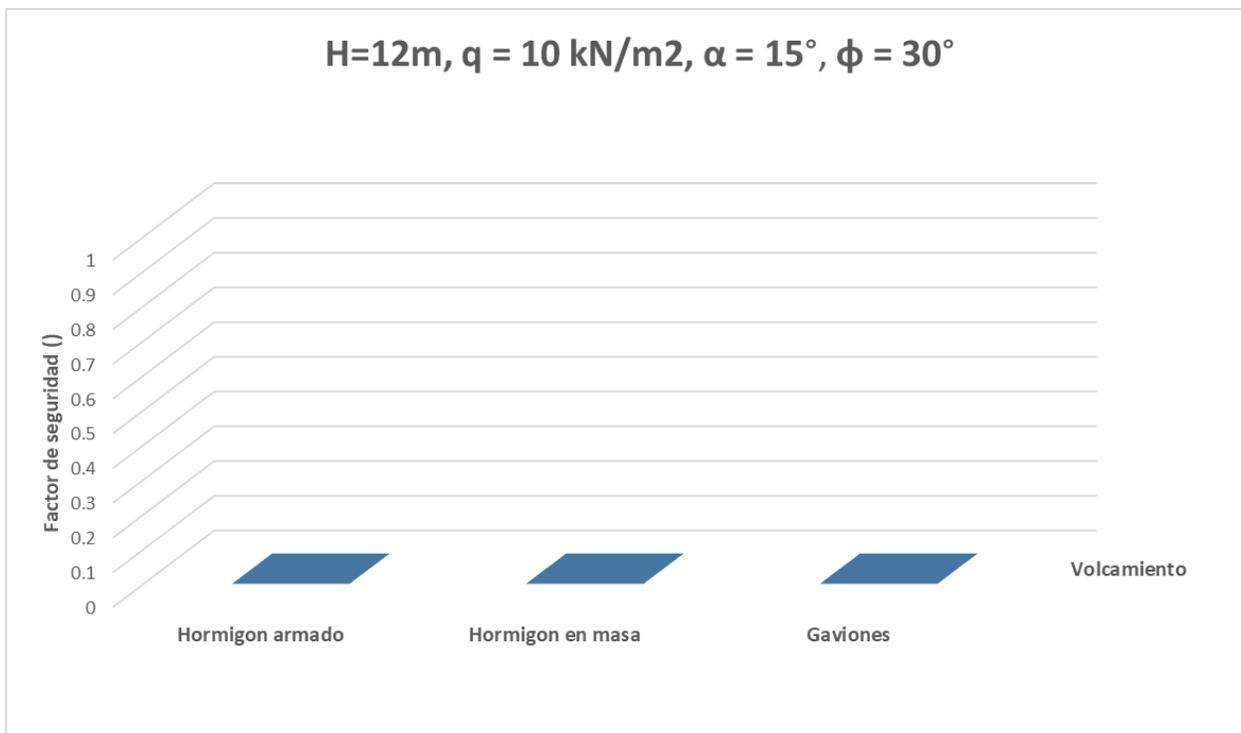
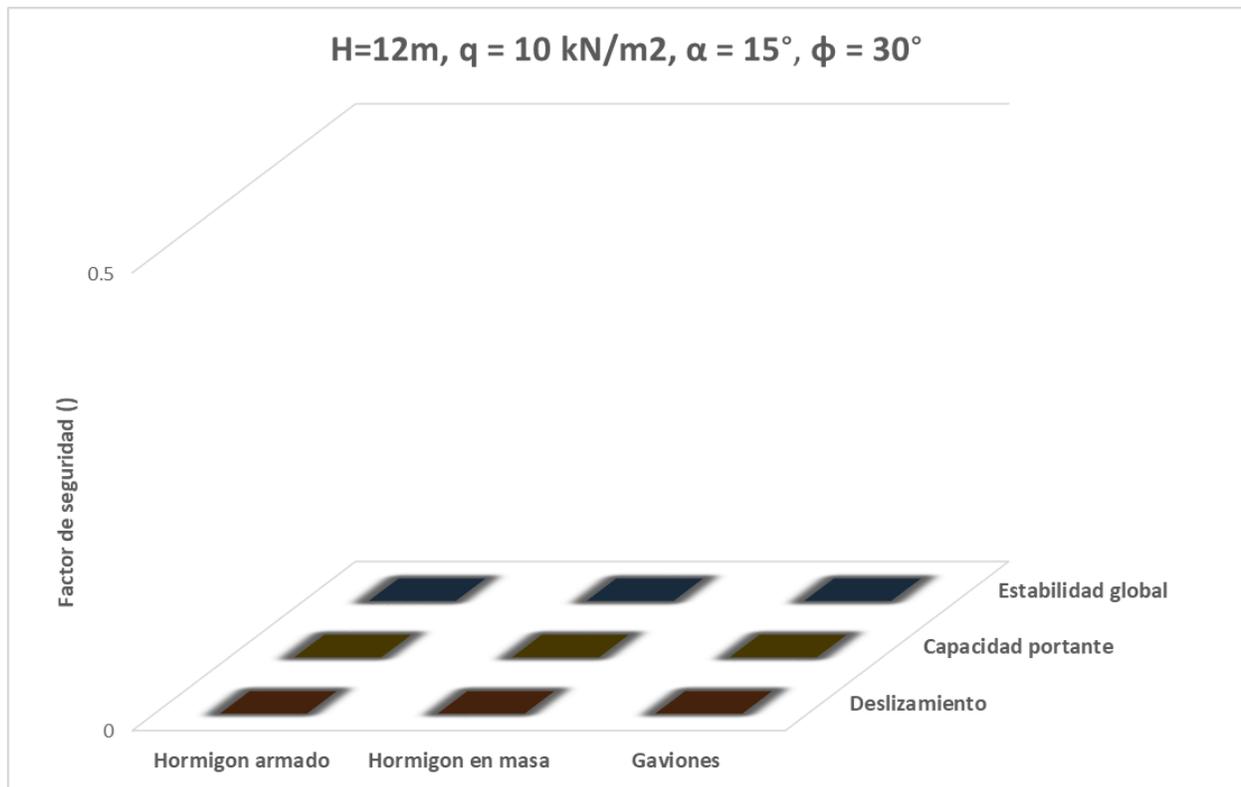


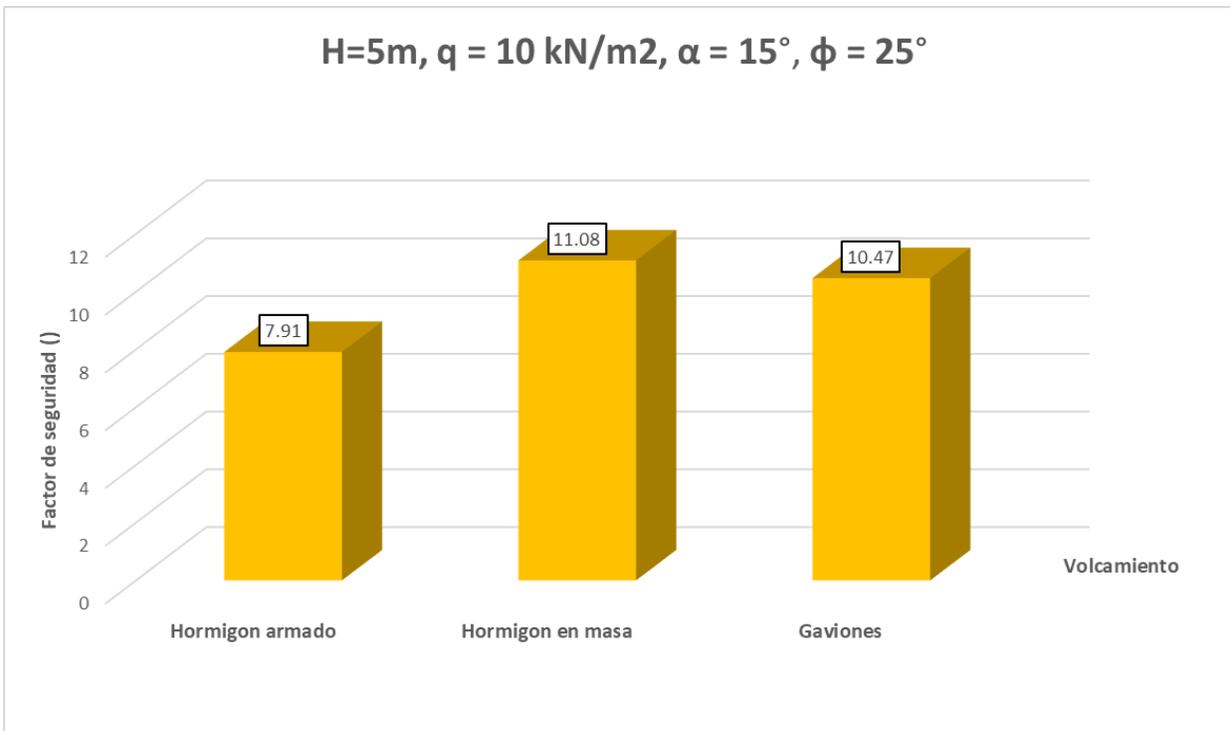
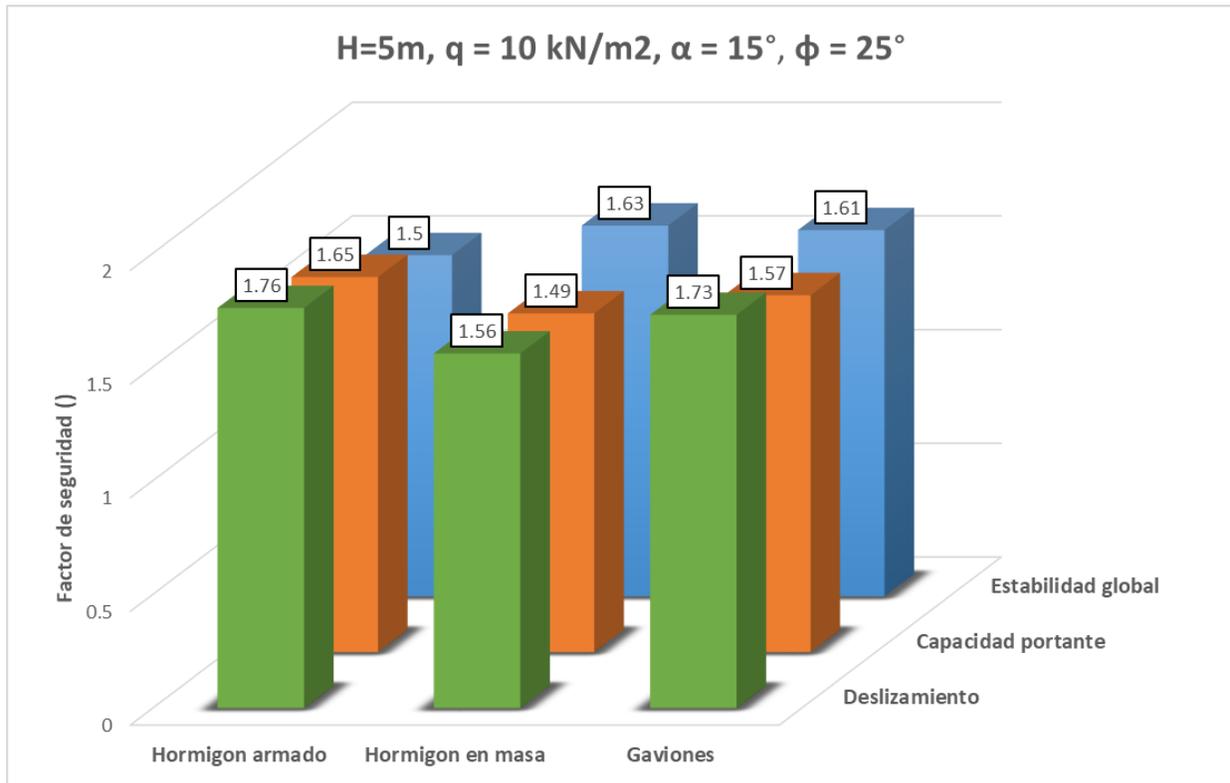


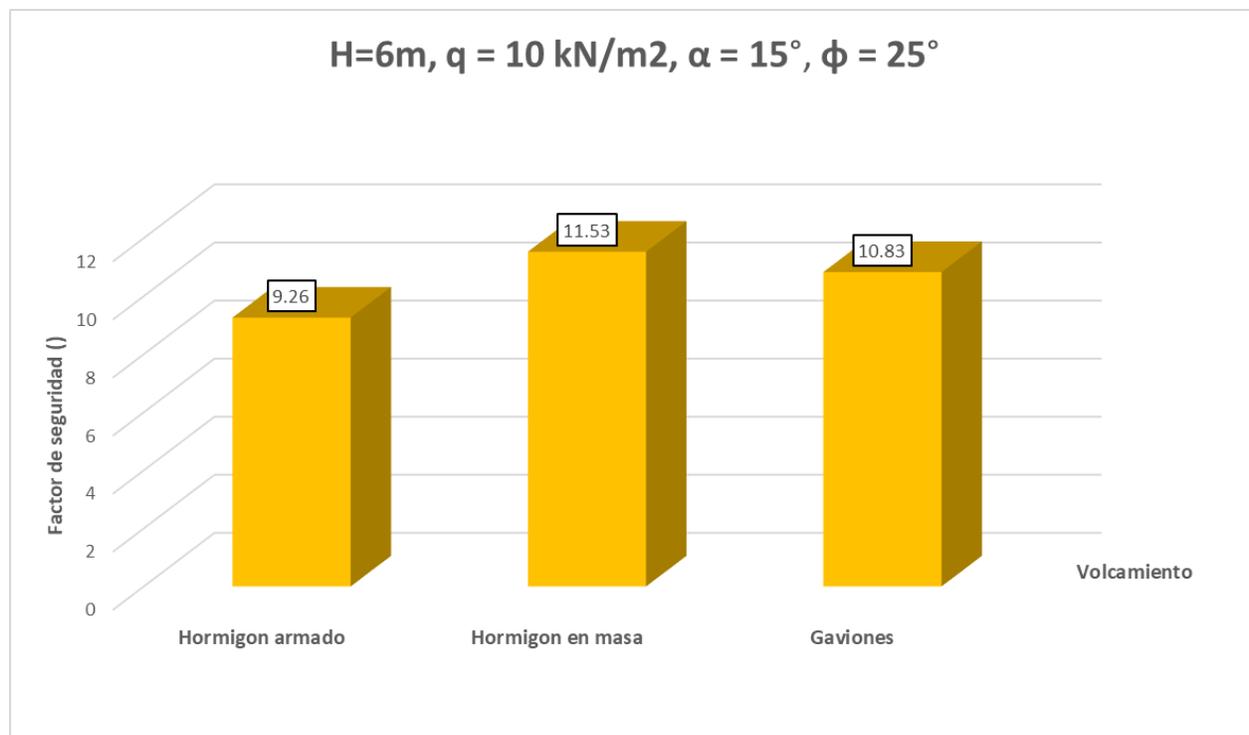
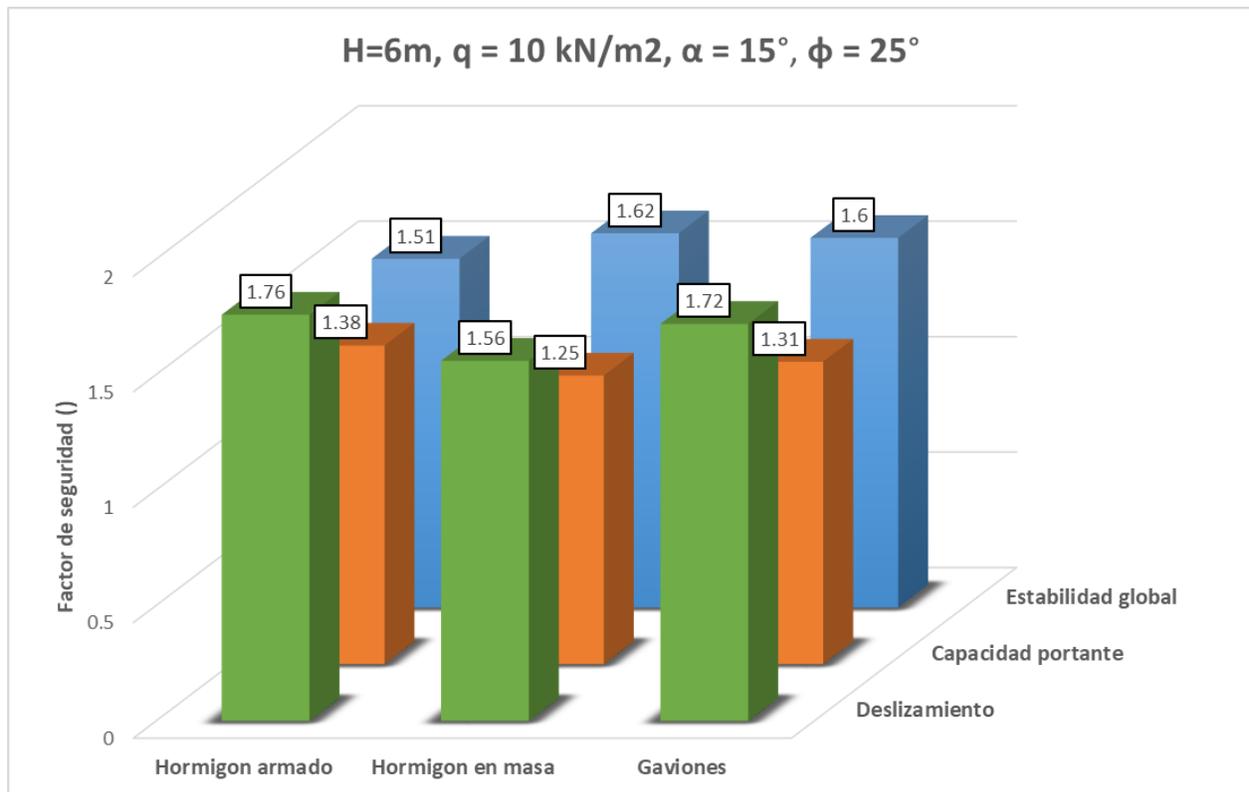


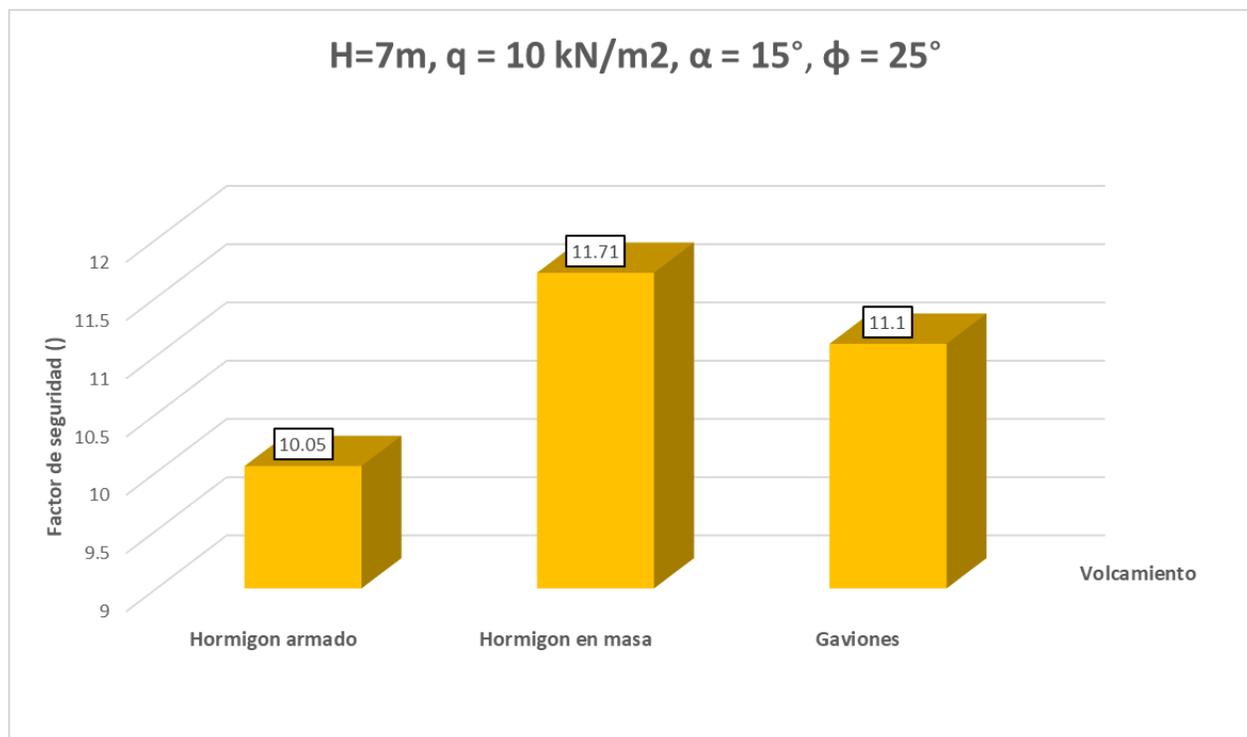
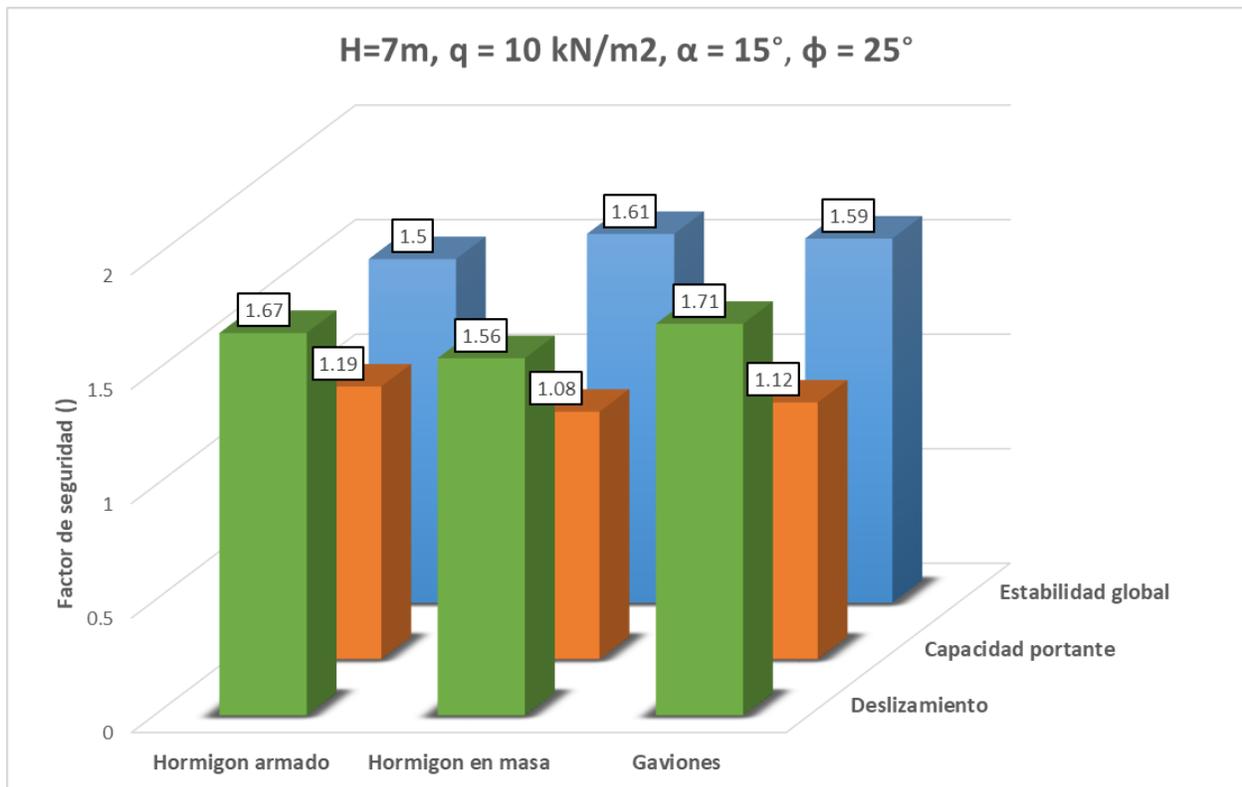


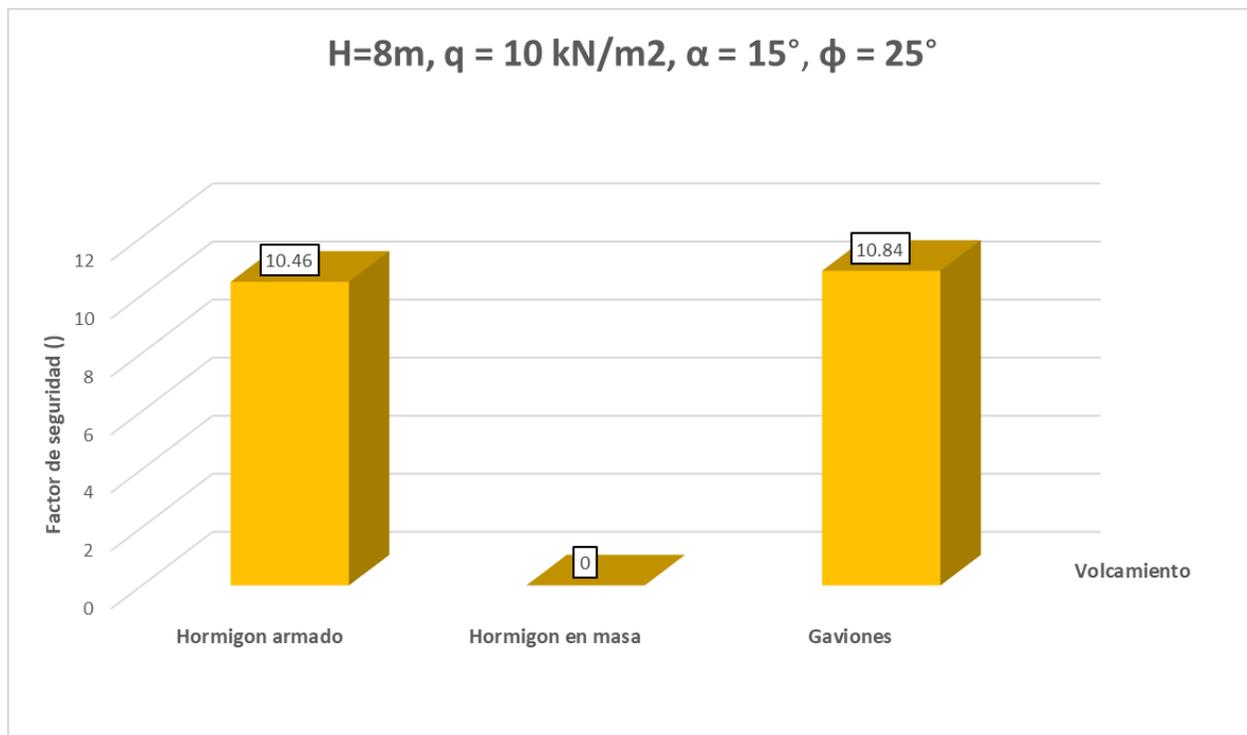
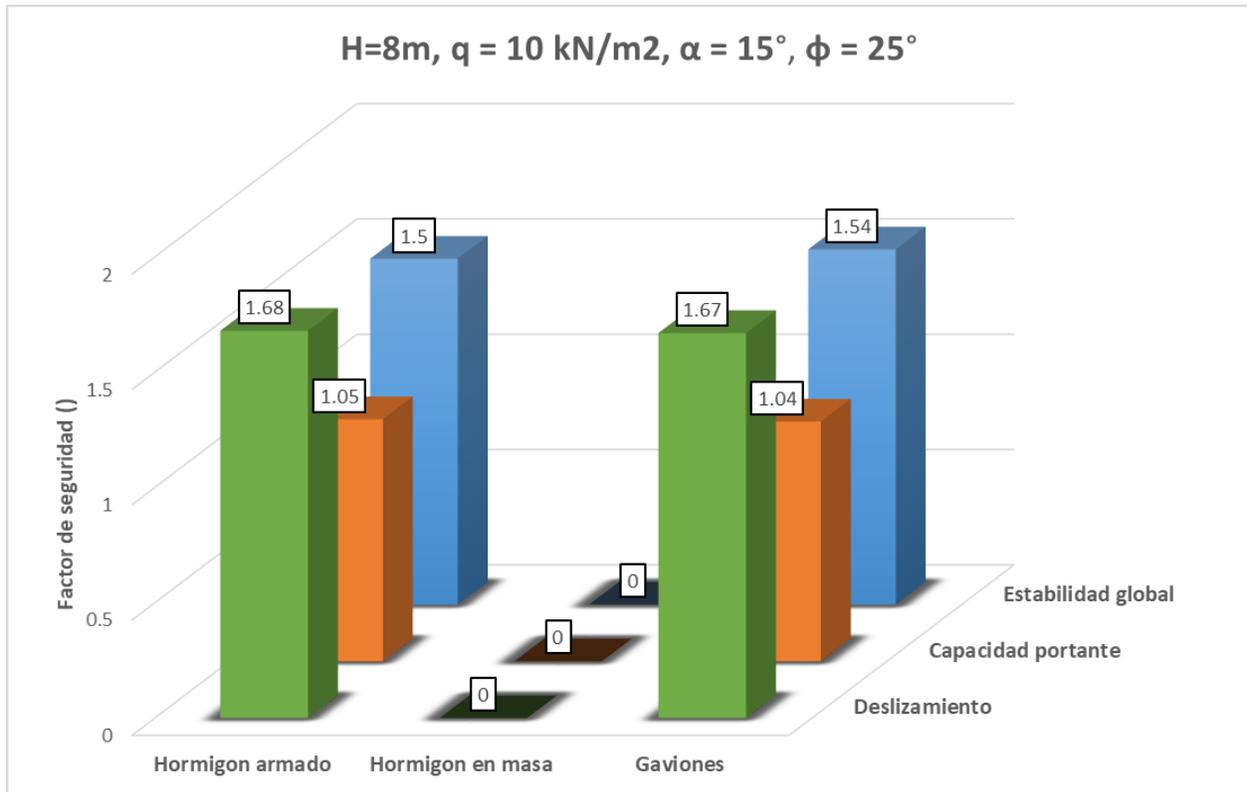


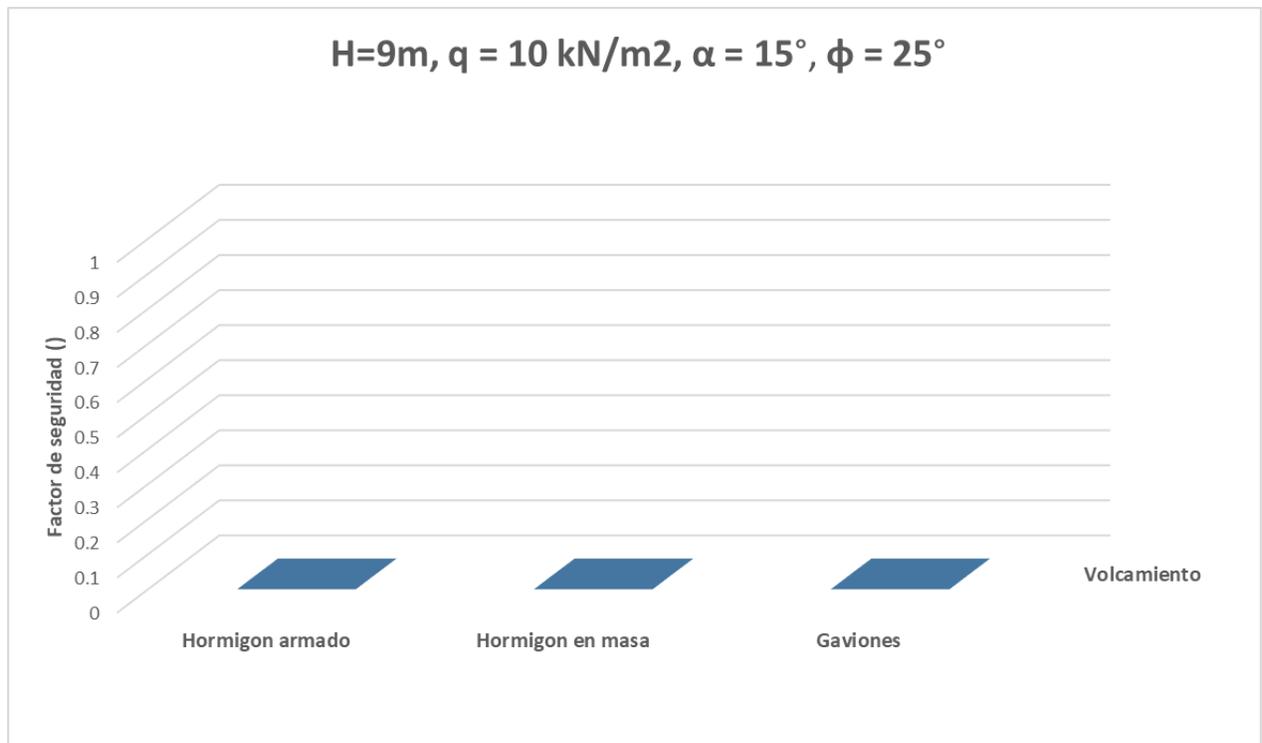
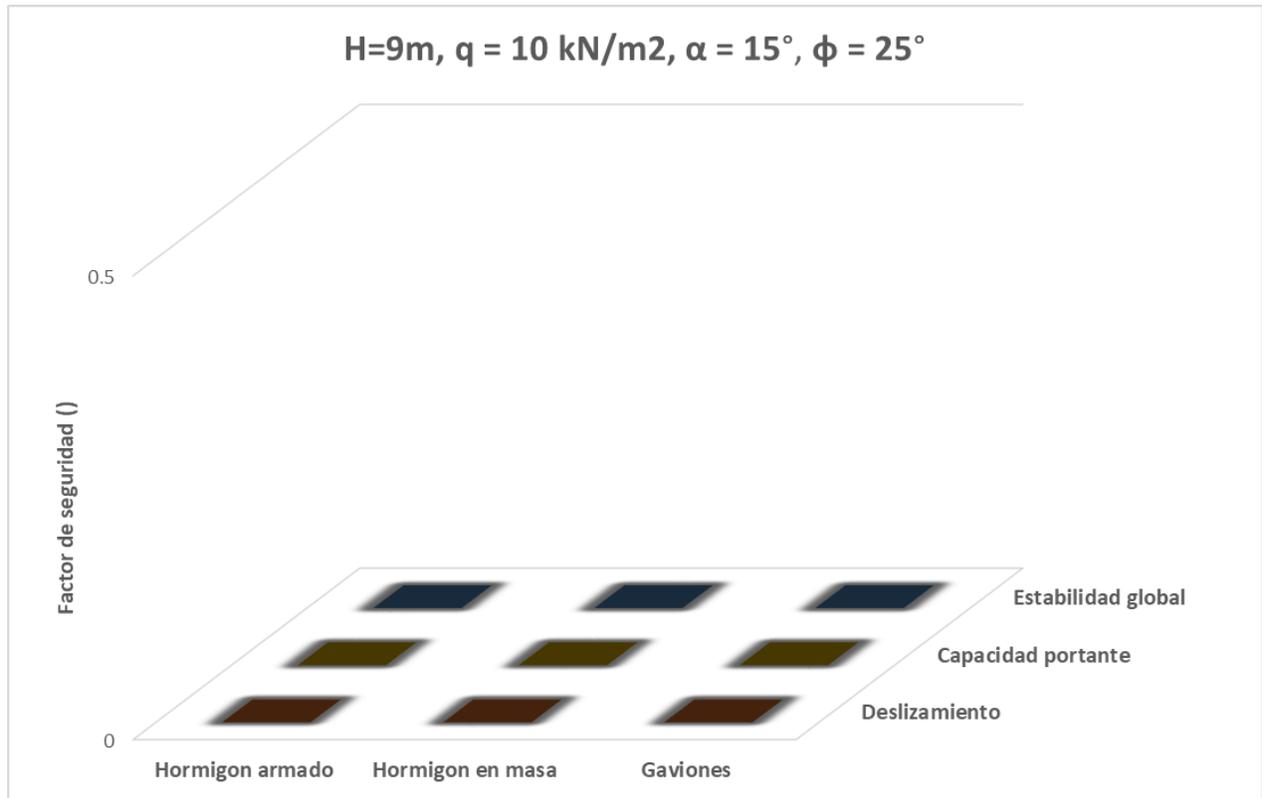


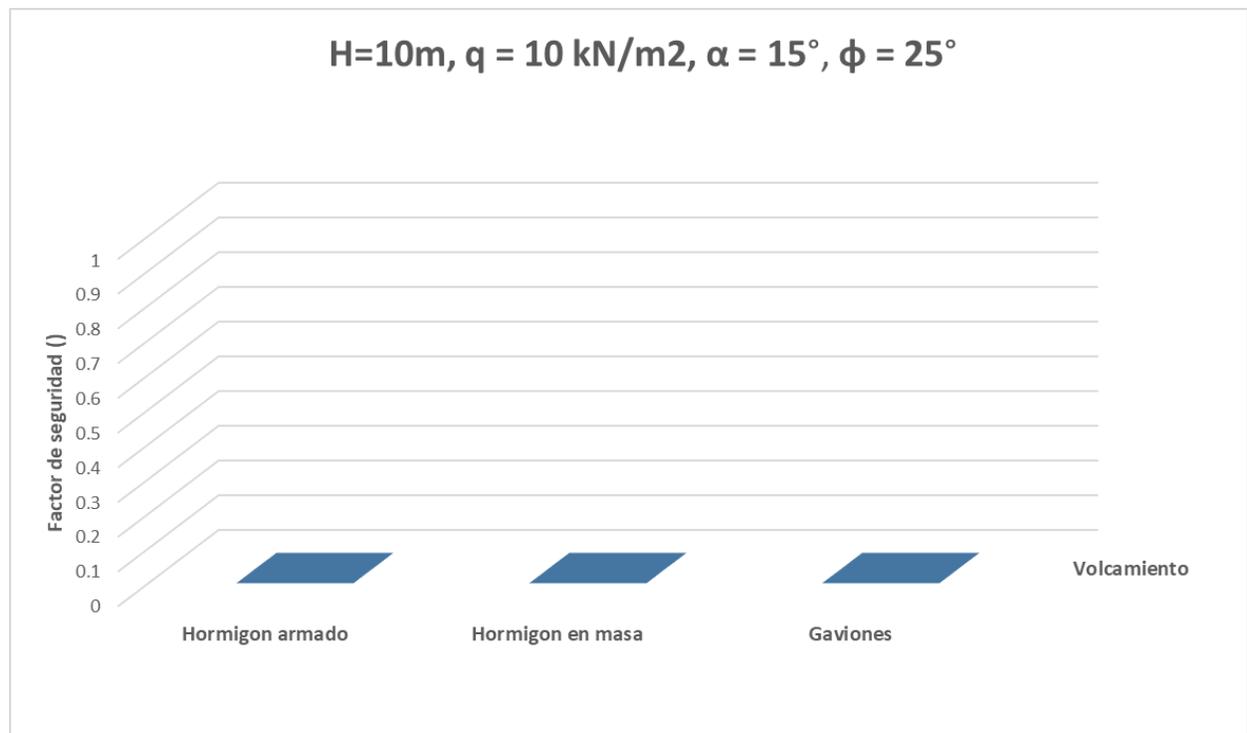
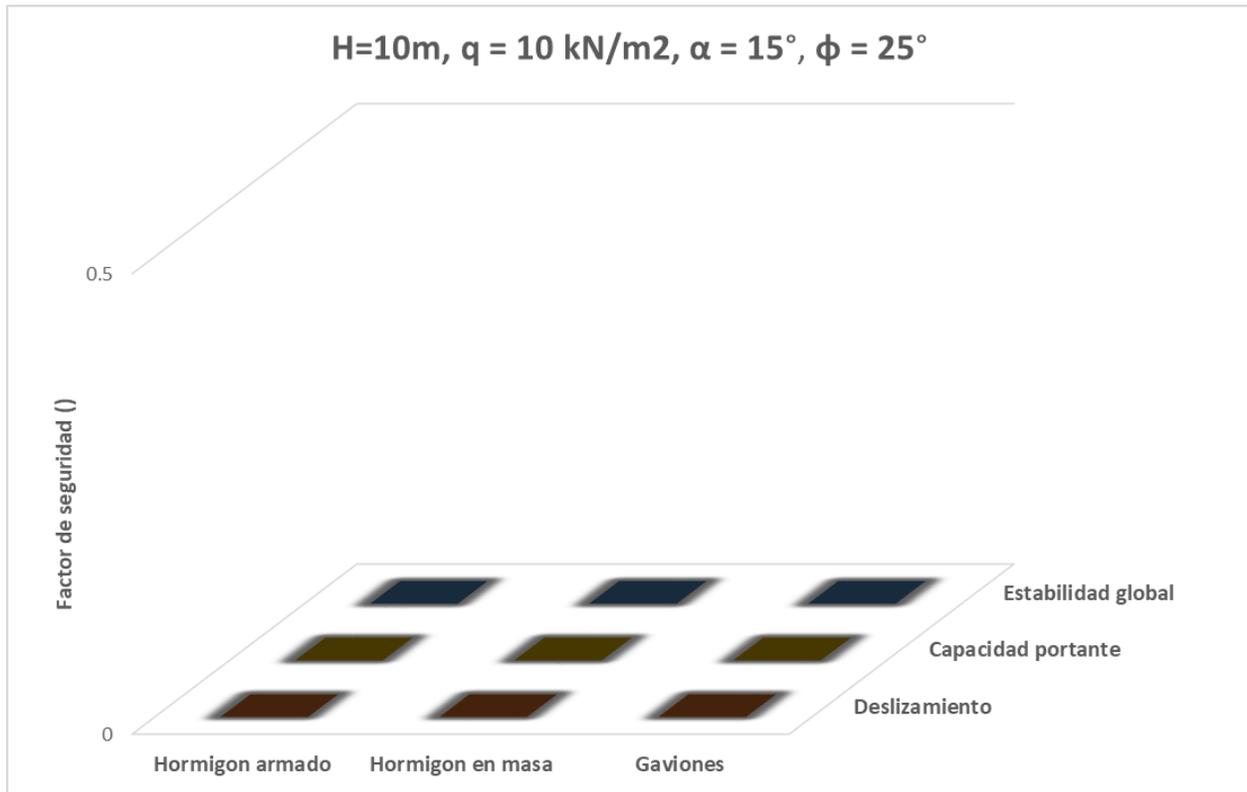


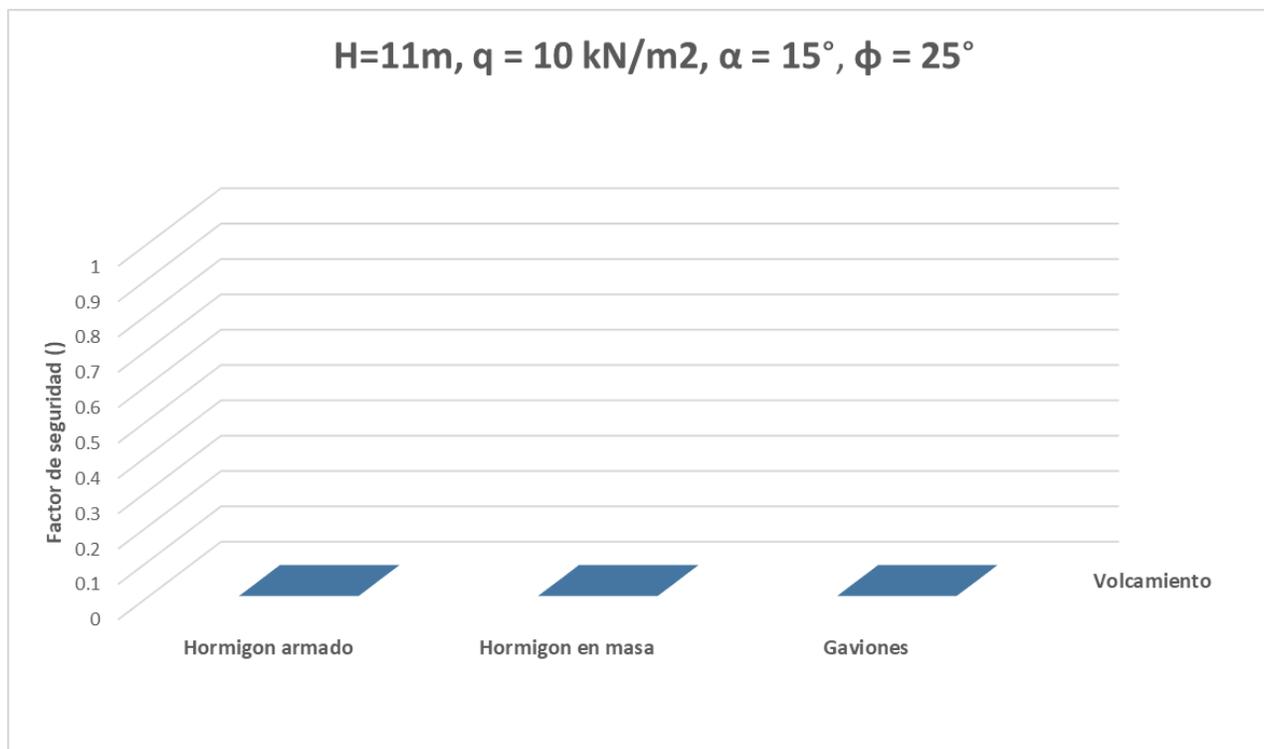
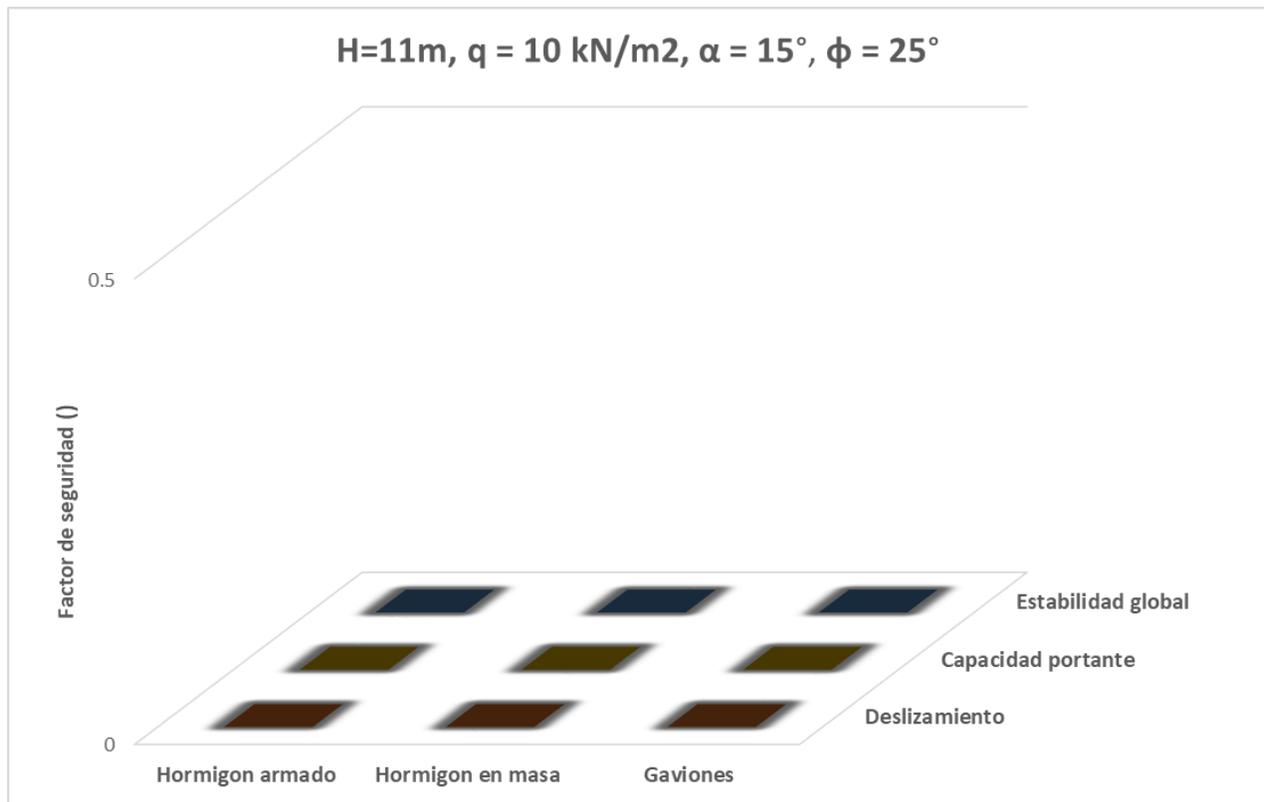


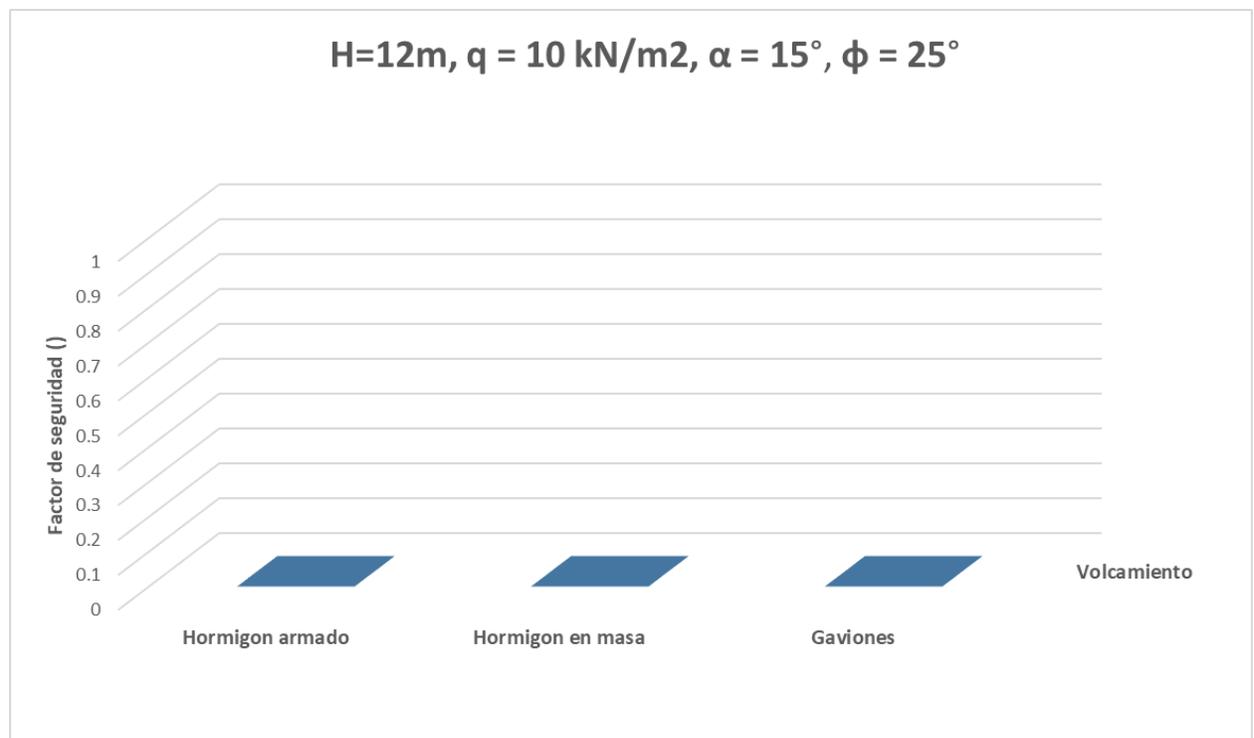
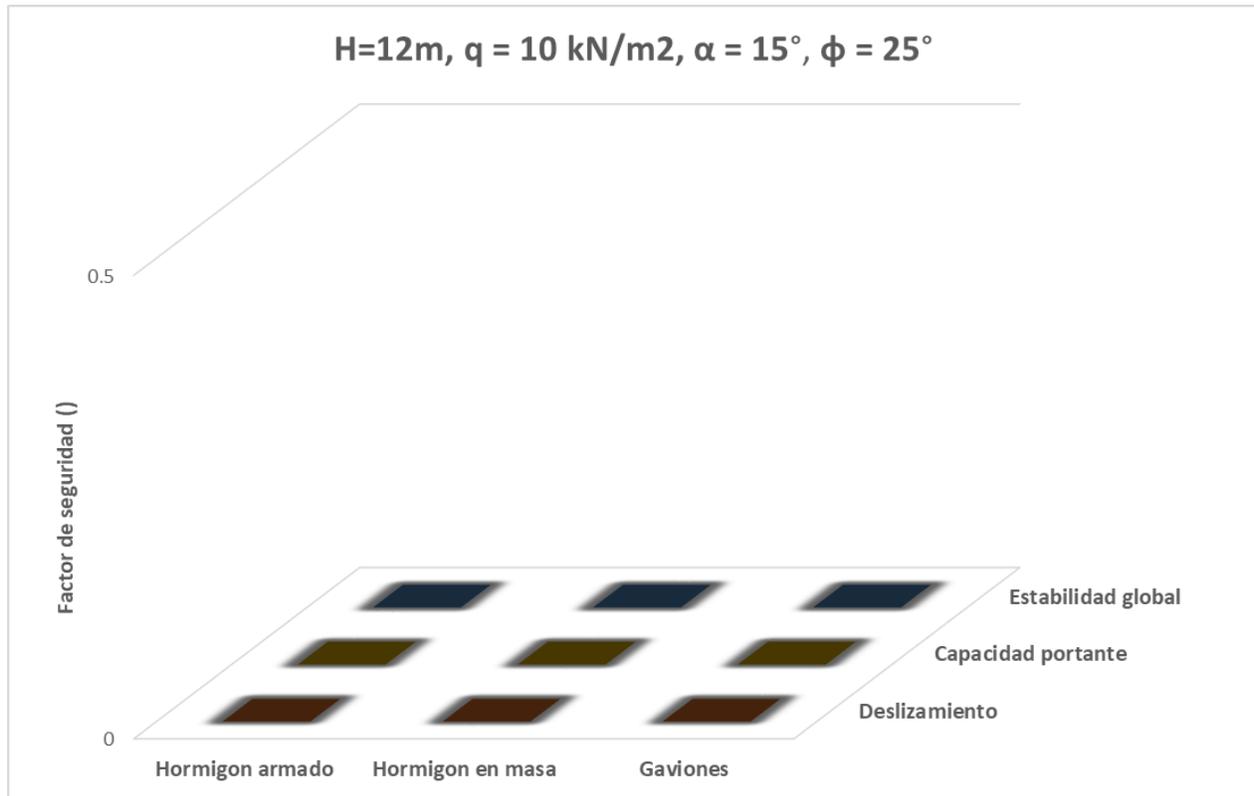








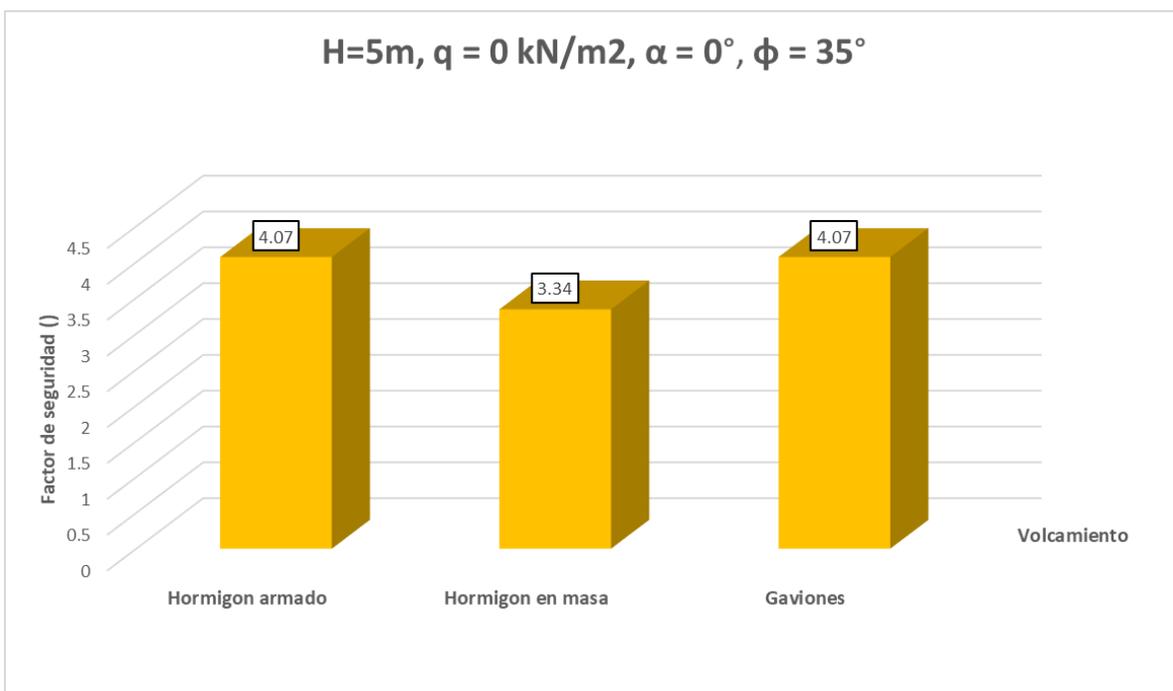
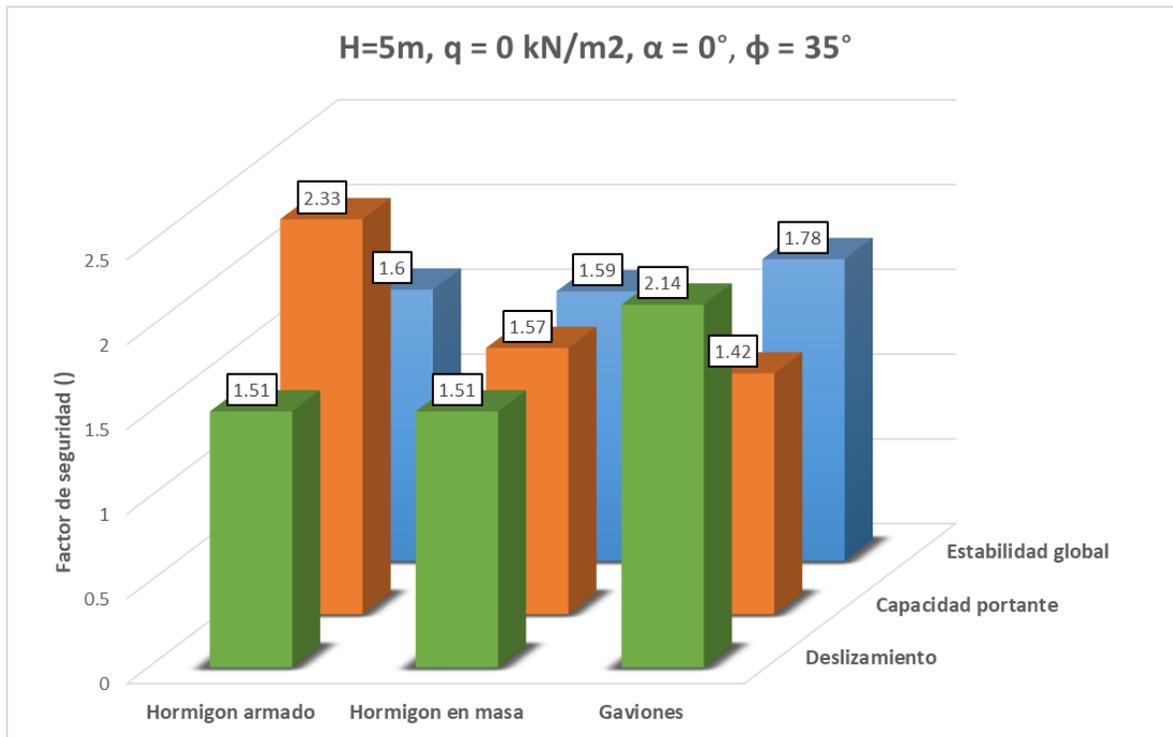


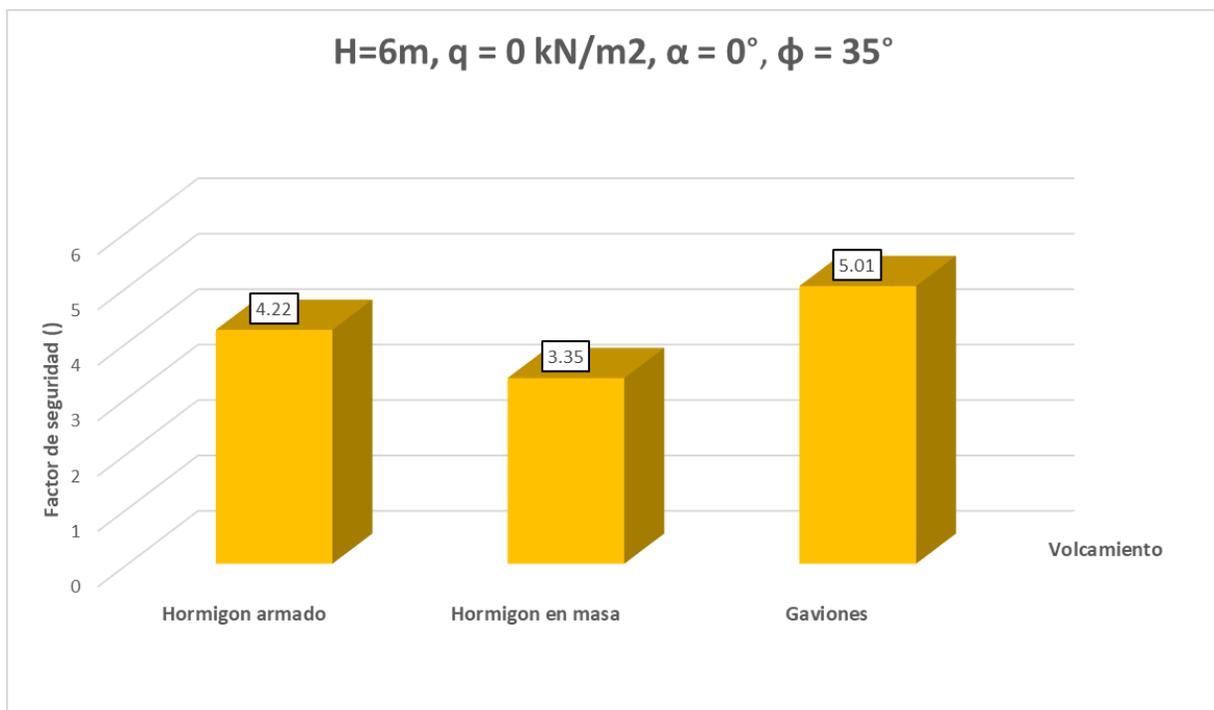
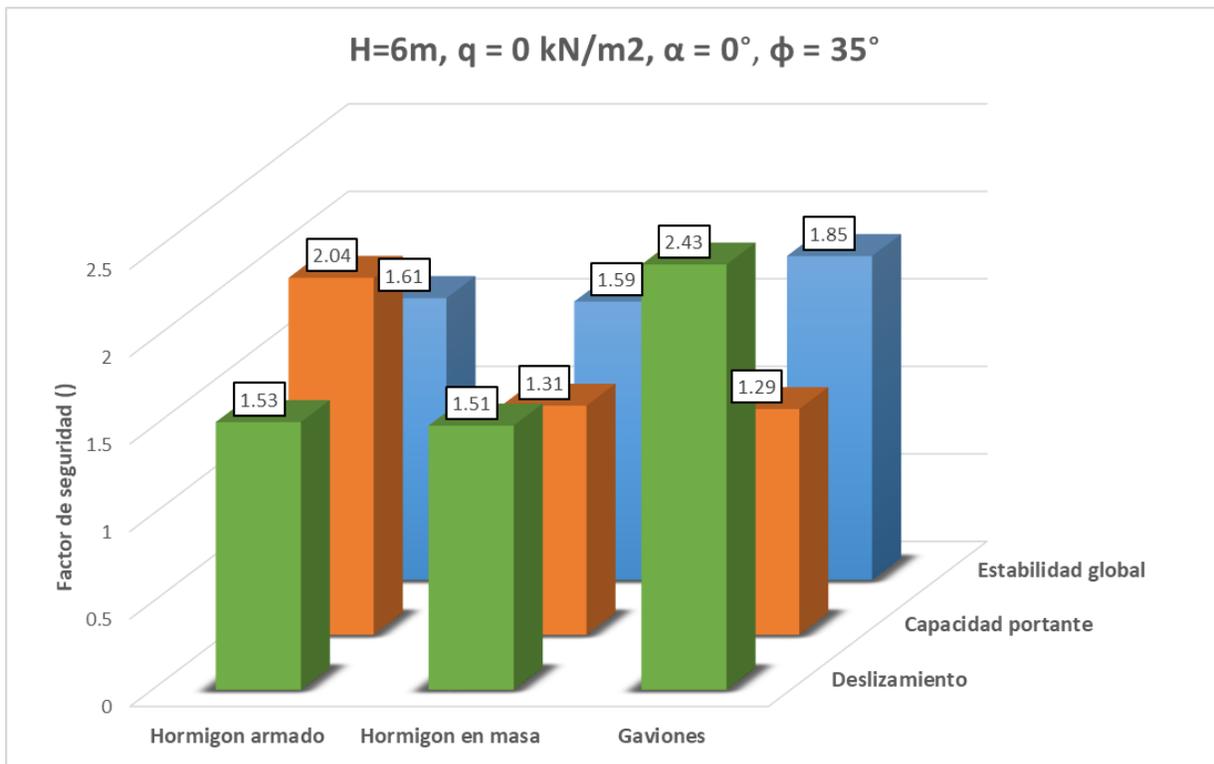


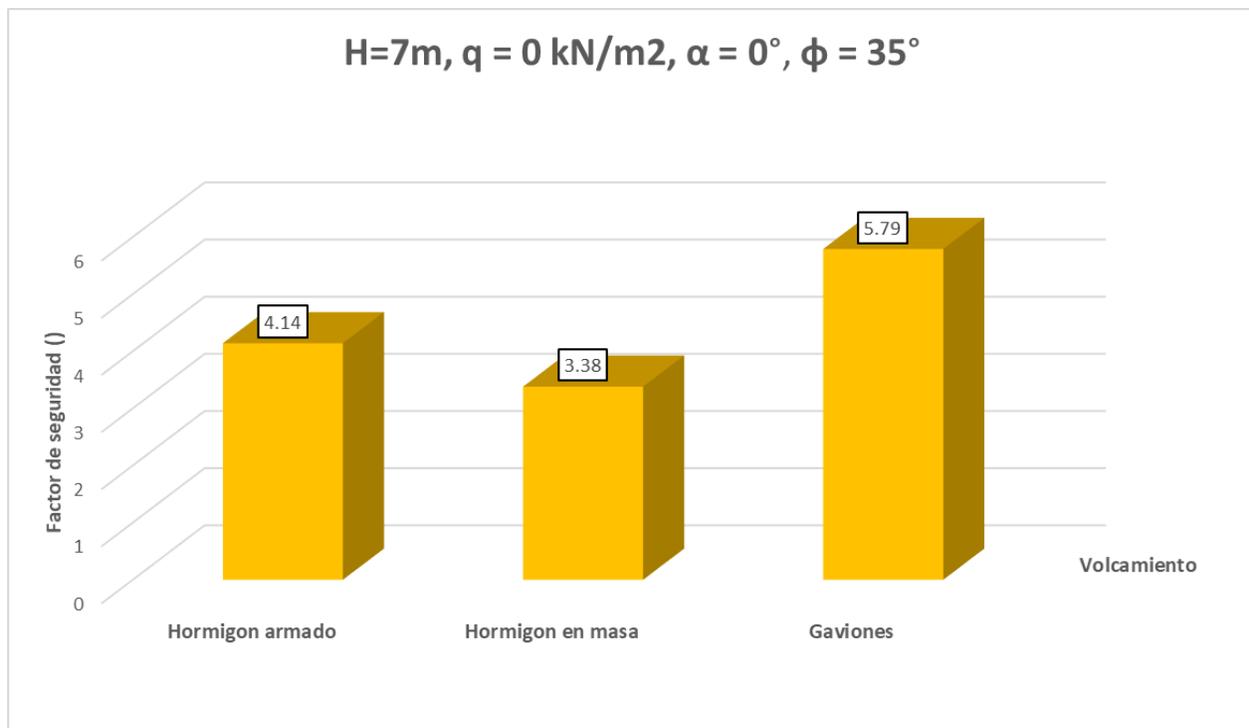
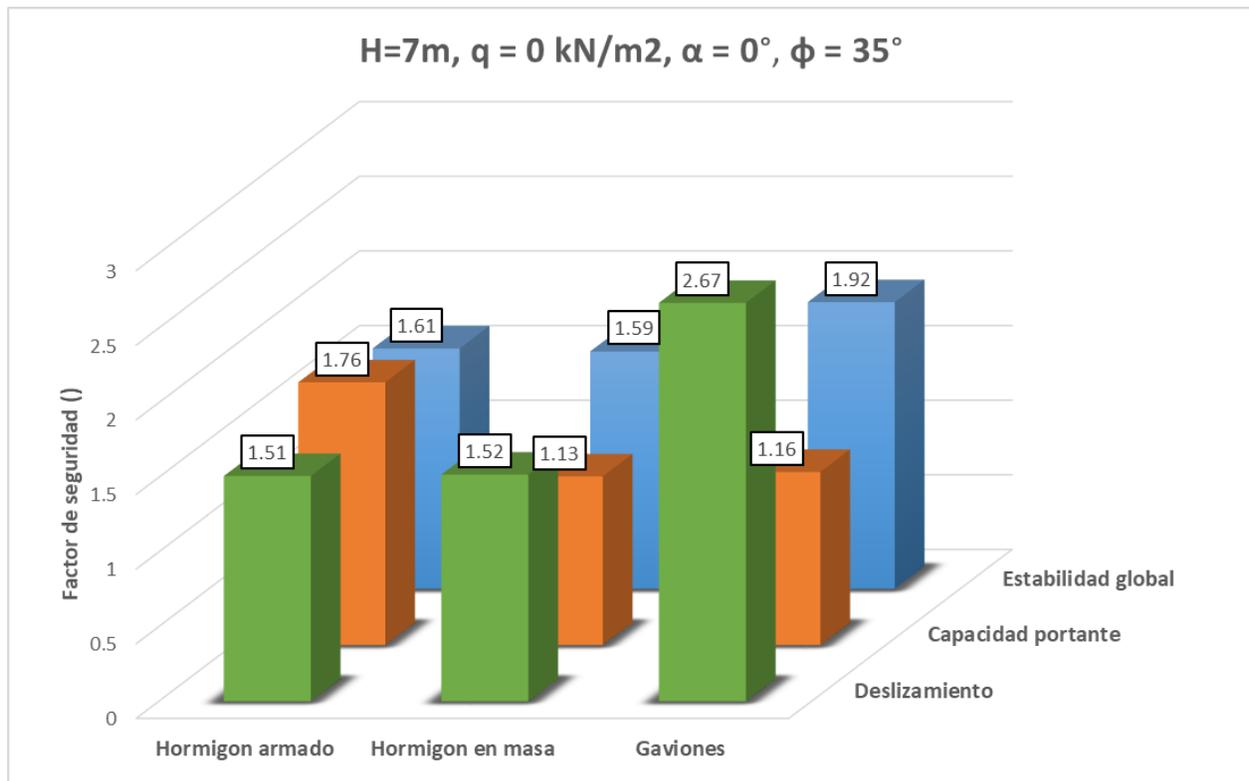
Para $q = 10$ (kN/m²), $\alpha = 15^\circ$ y $\phi = 20^\circ$ con las alturas de 5m a 12m no se tiene solución como los gráficos iguales a 0 mostrados anteriormente.

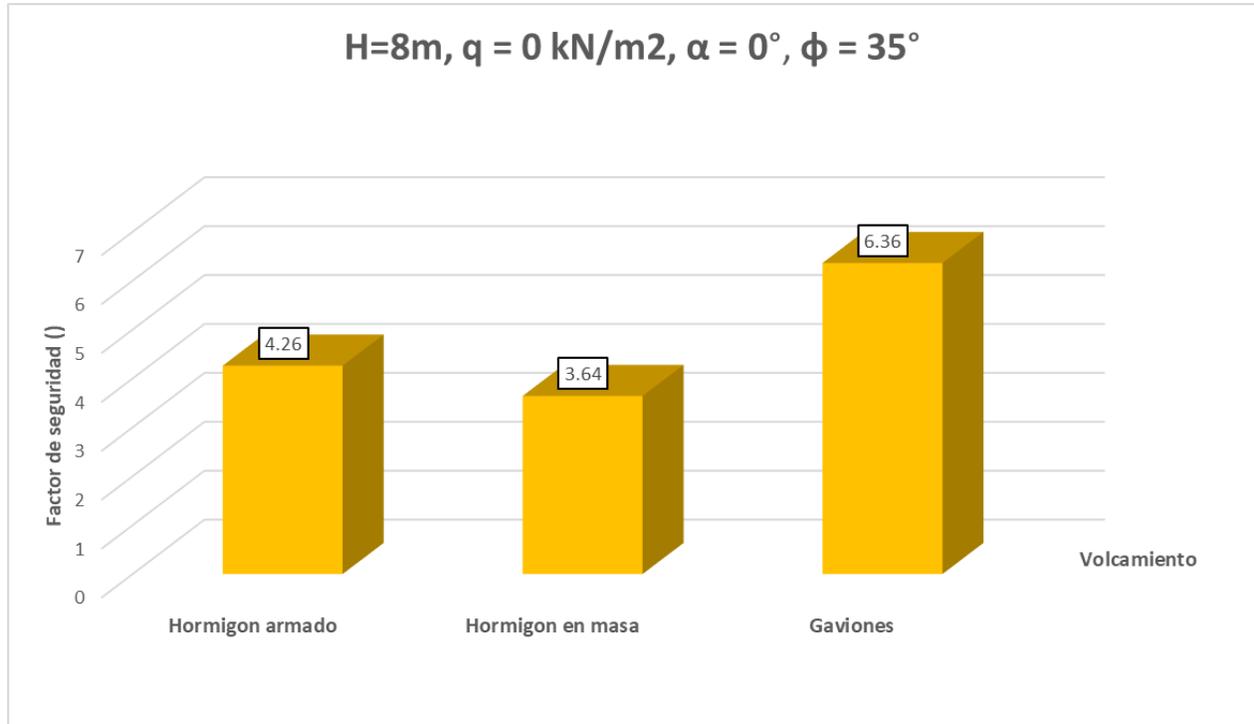
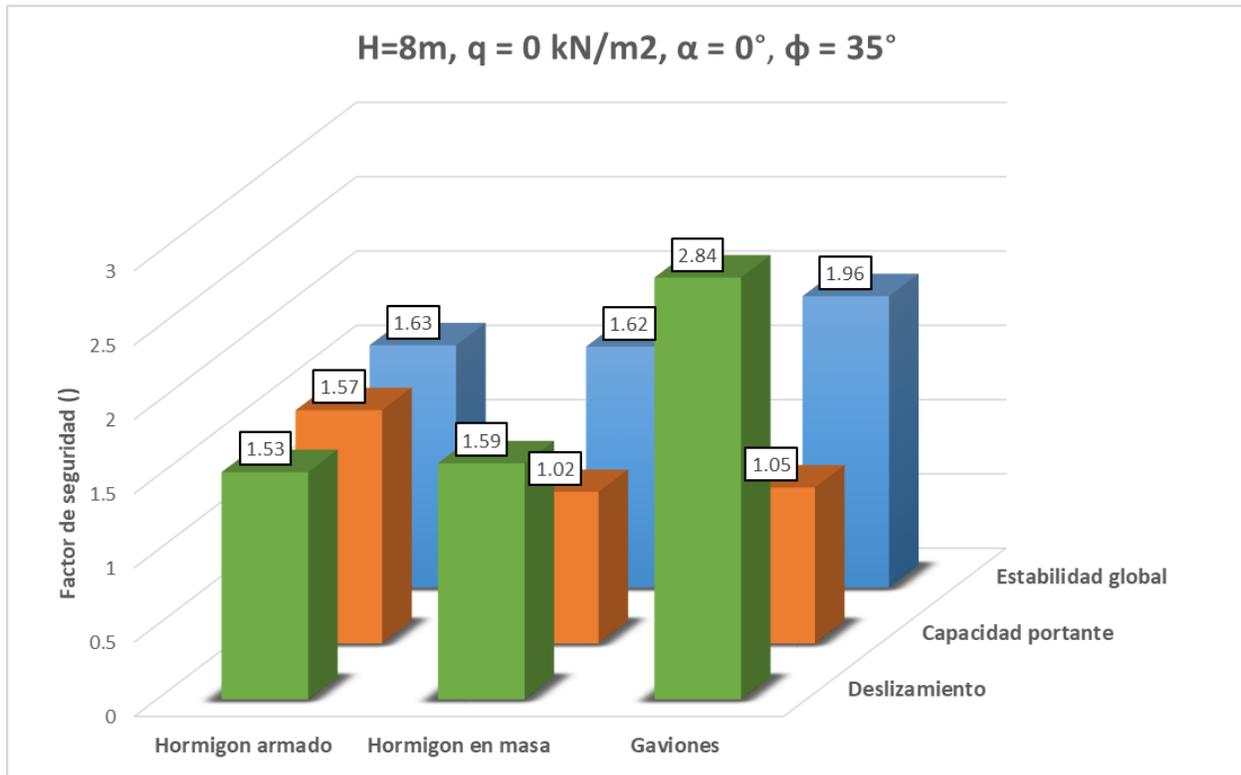
Para $q = 10$ (kN/m²), $\alpha = 30^\circ$ y $\phi = 35^\circ, 30^\circ, 25^\circ$ y 20° con las alturas de 5m a 12m no se tiene solución.

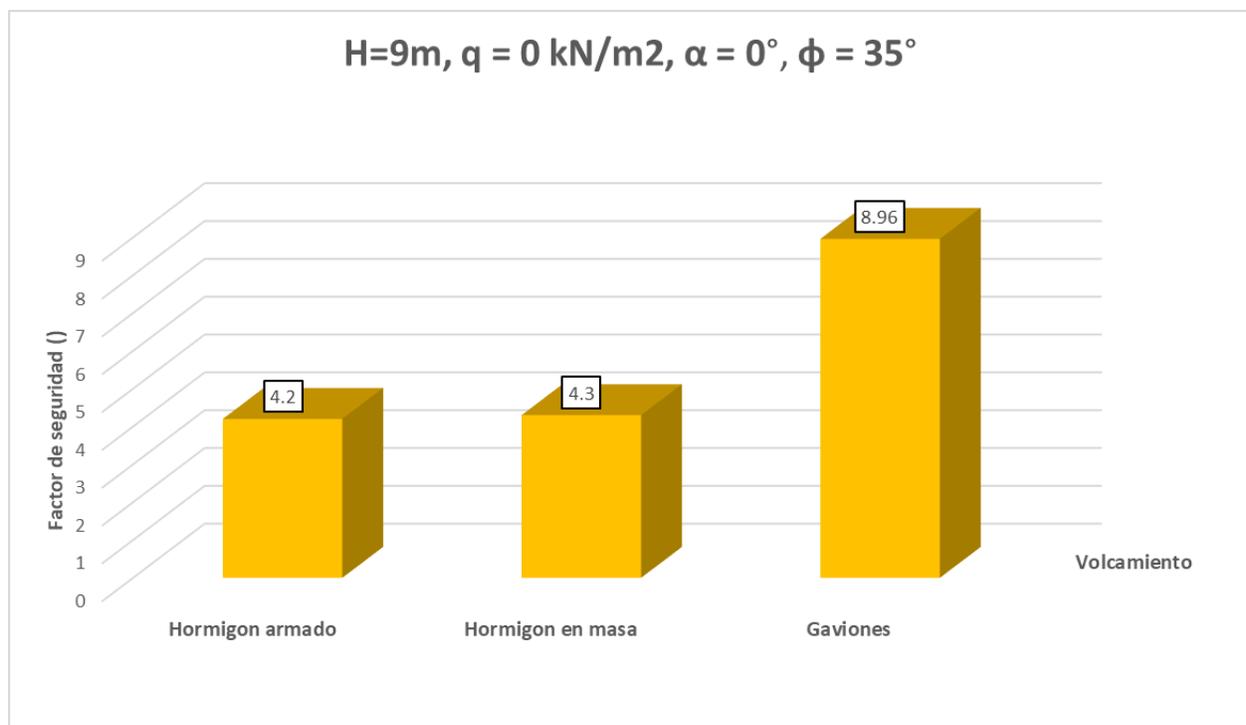
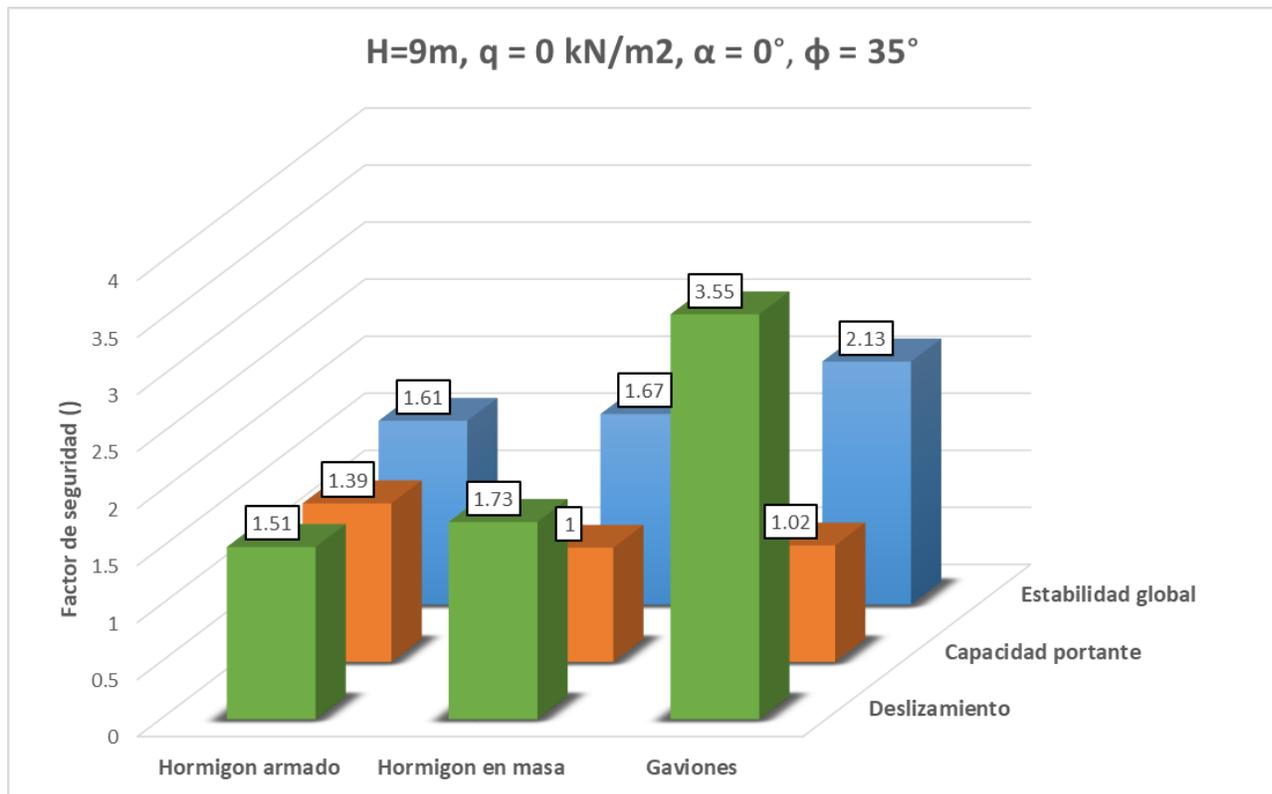
Anexo 10: Gráficos de comparación de los factores de seguridad para los tres tipos de muros por método de Rankine

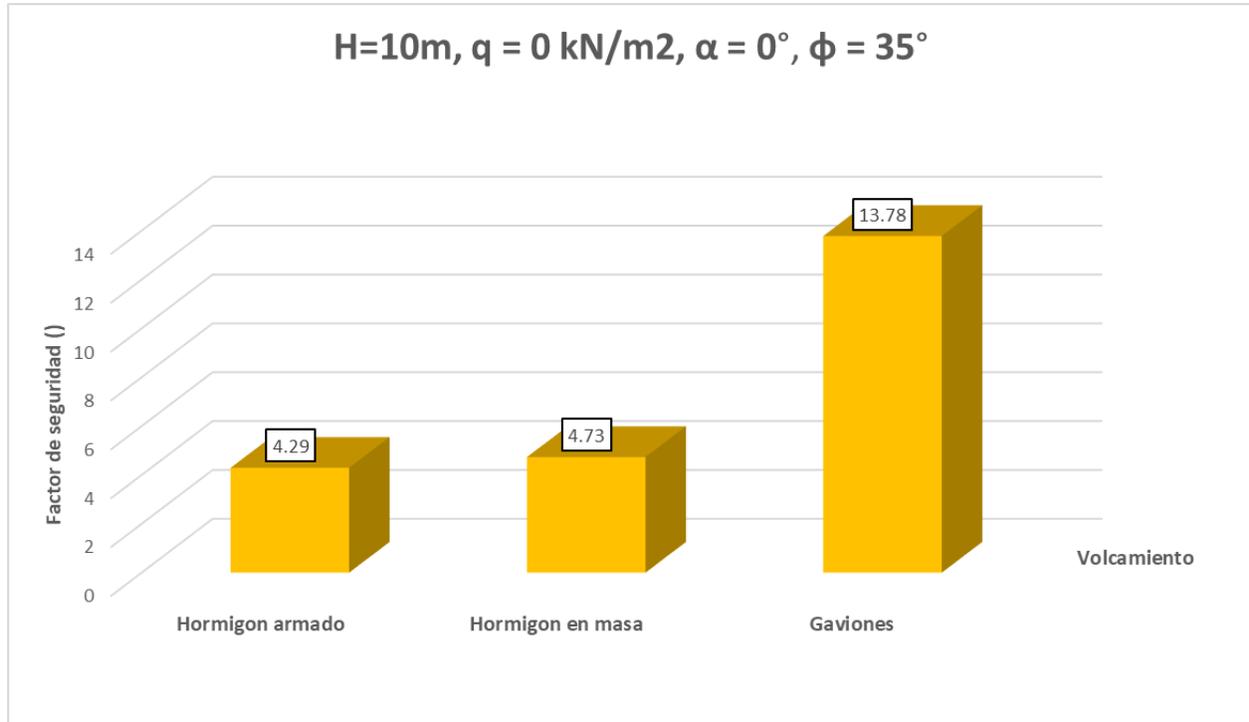
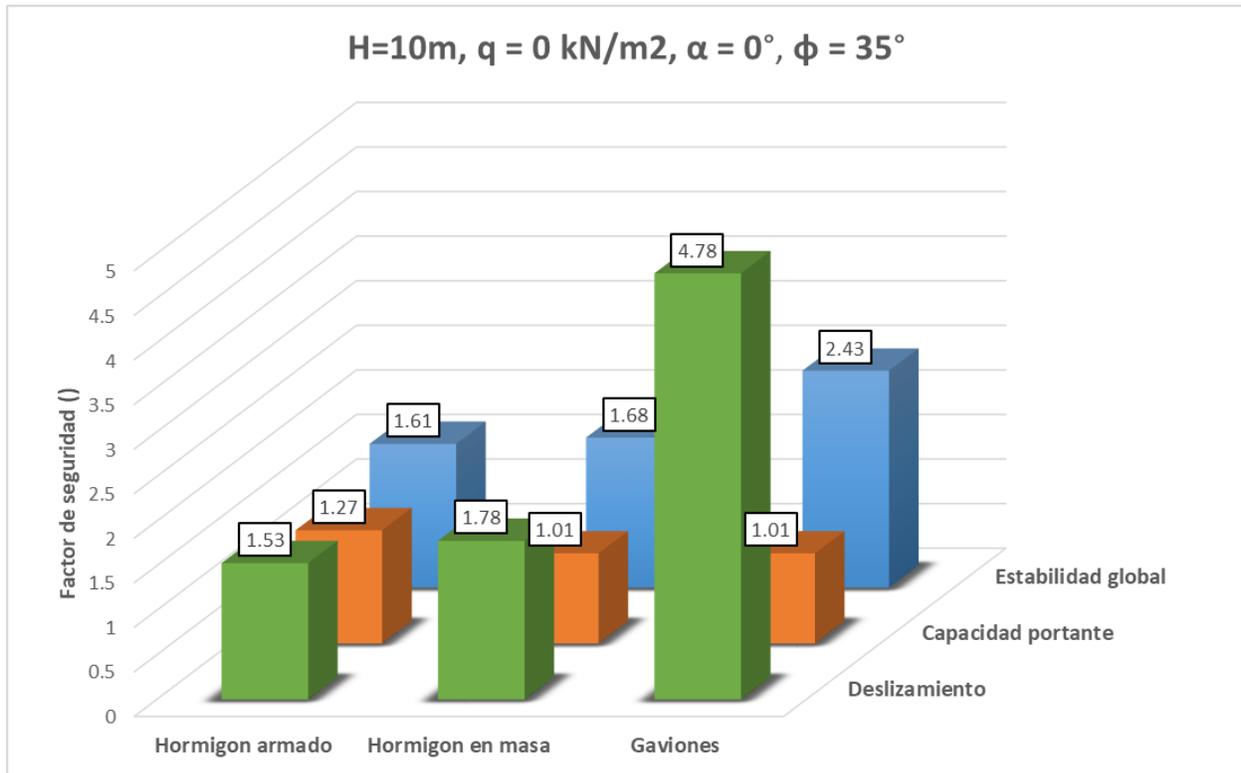


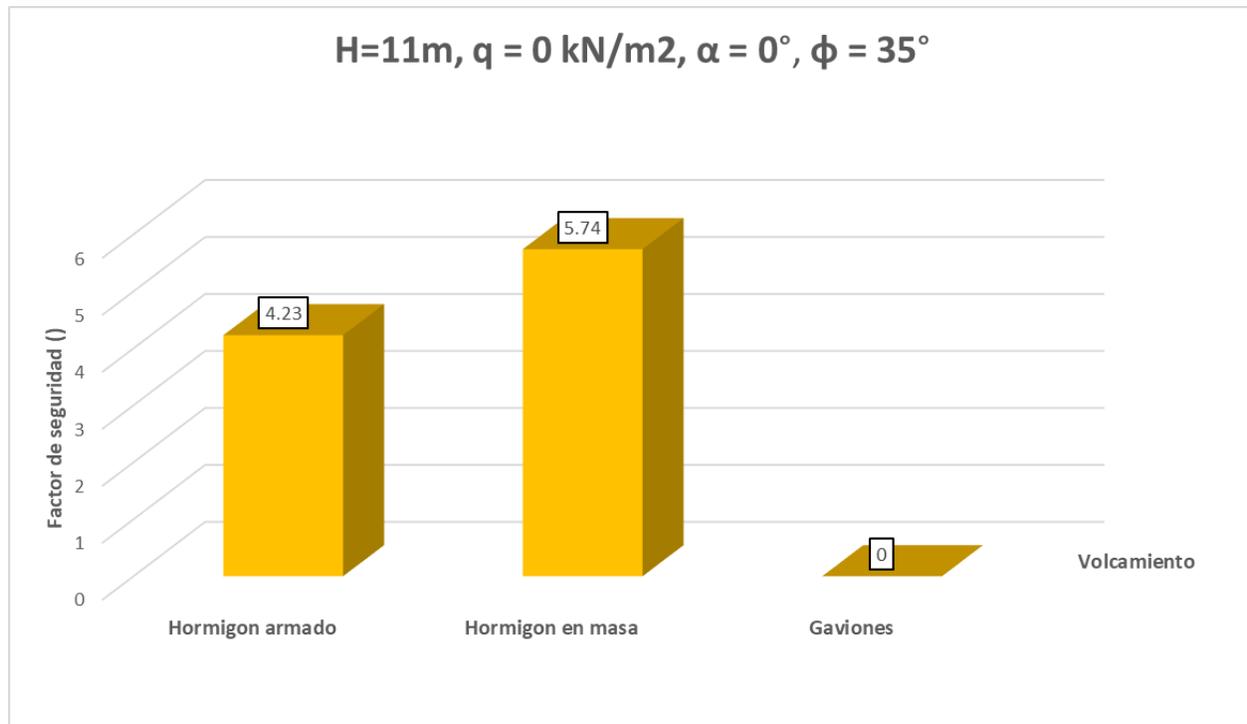
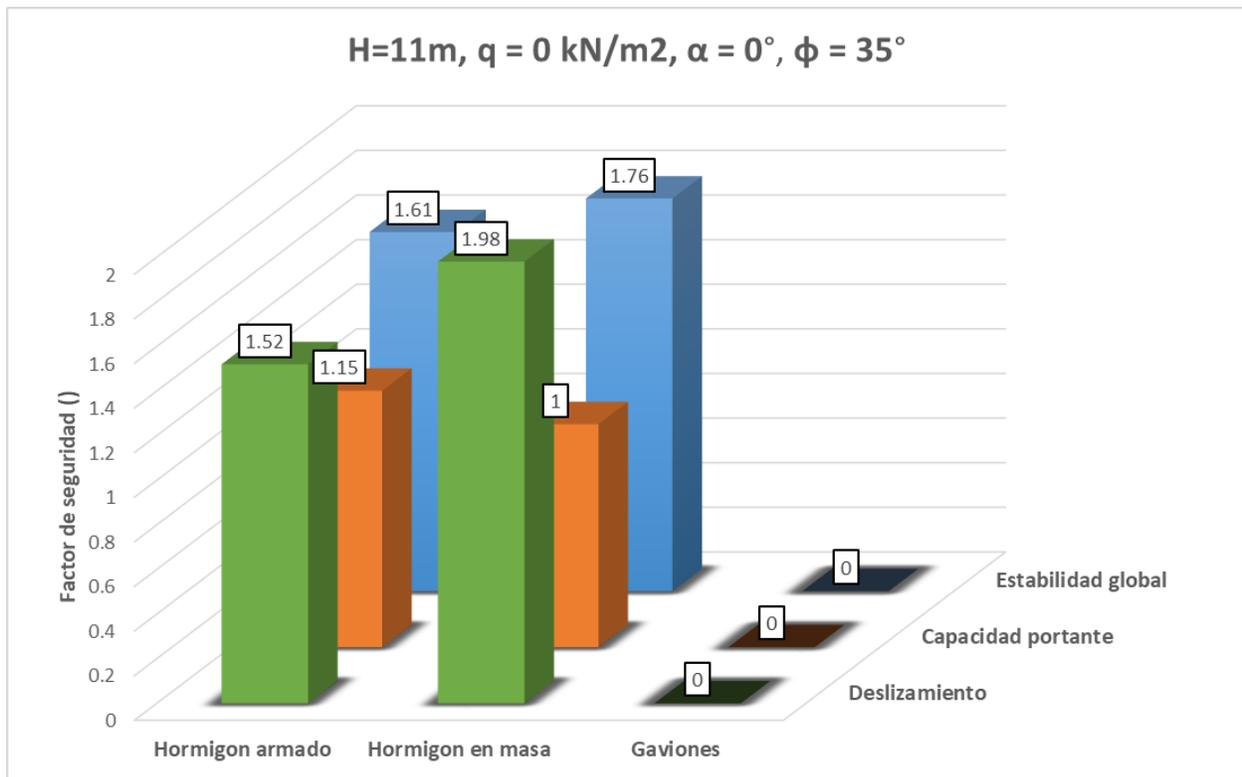


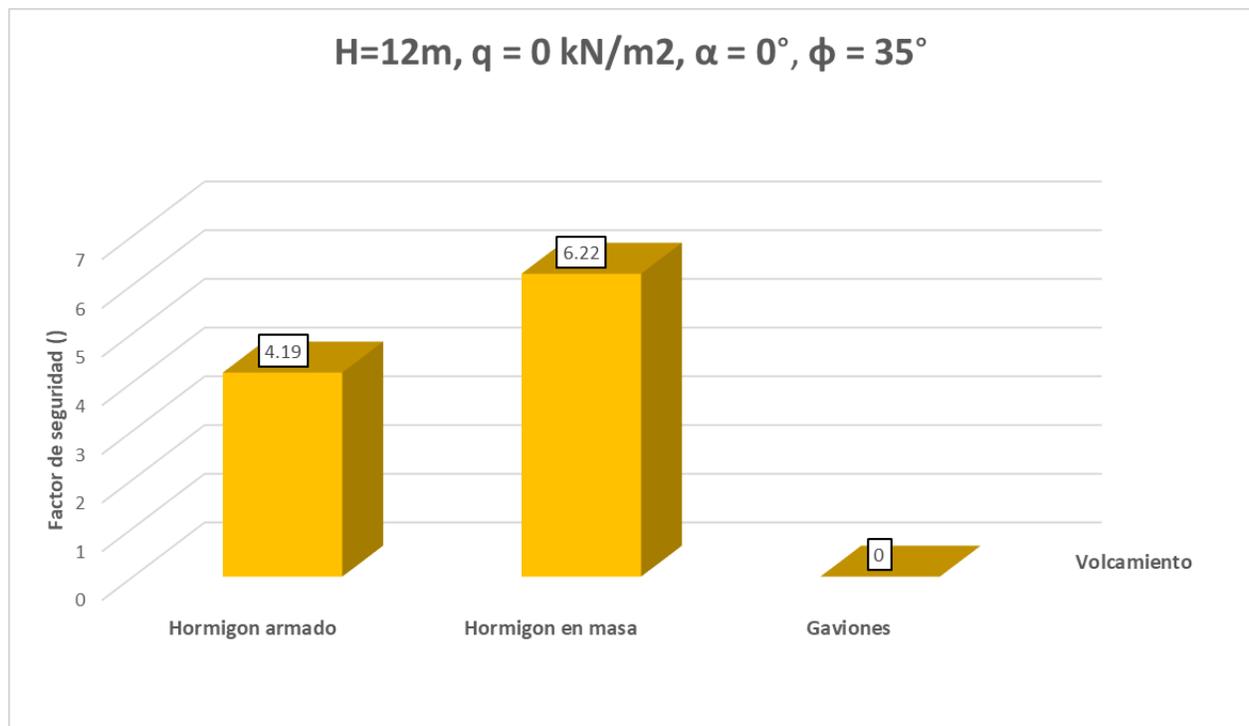
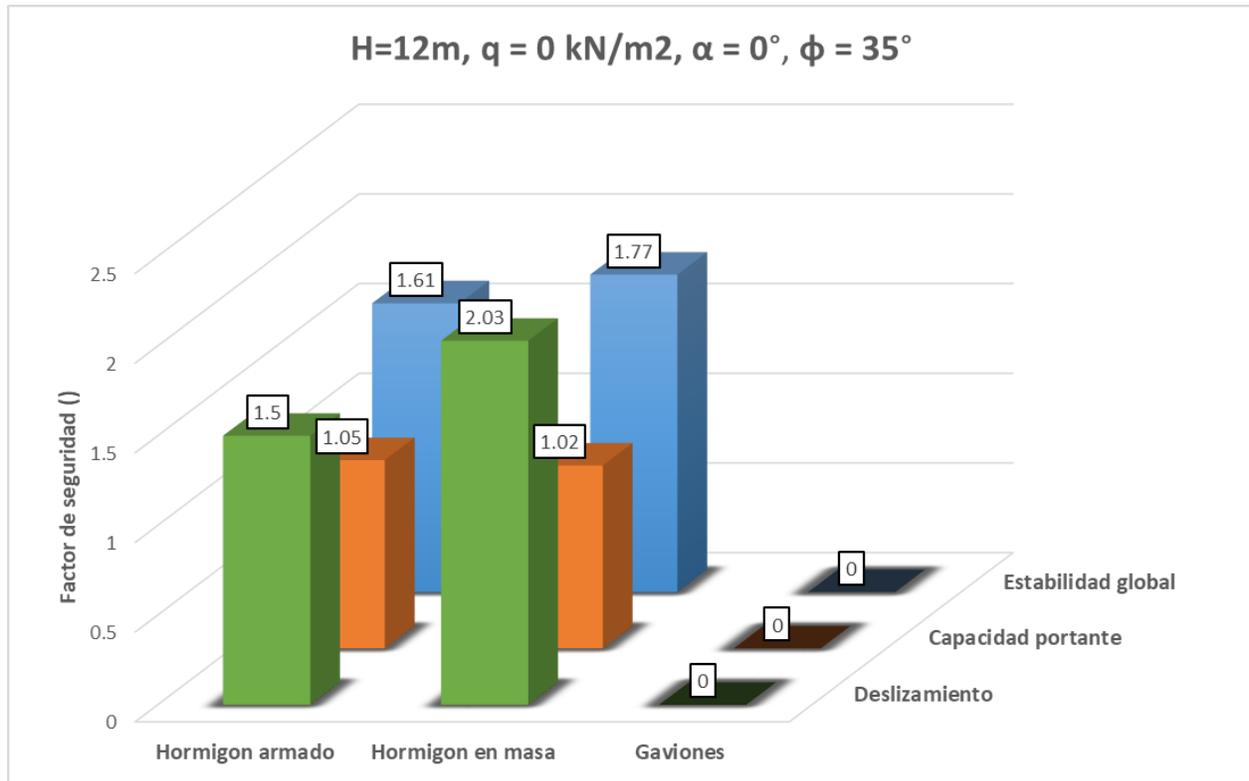


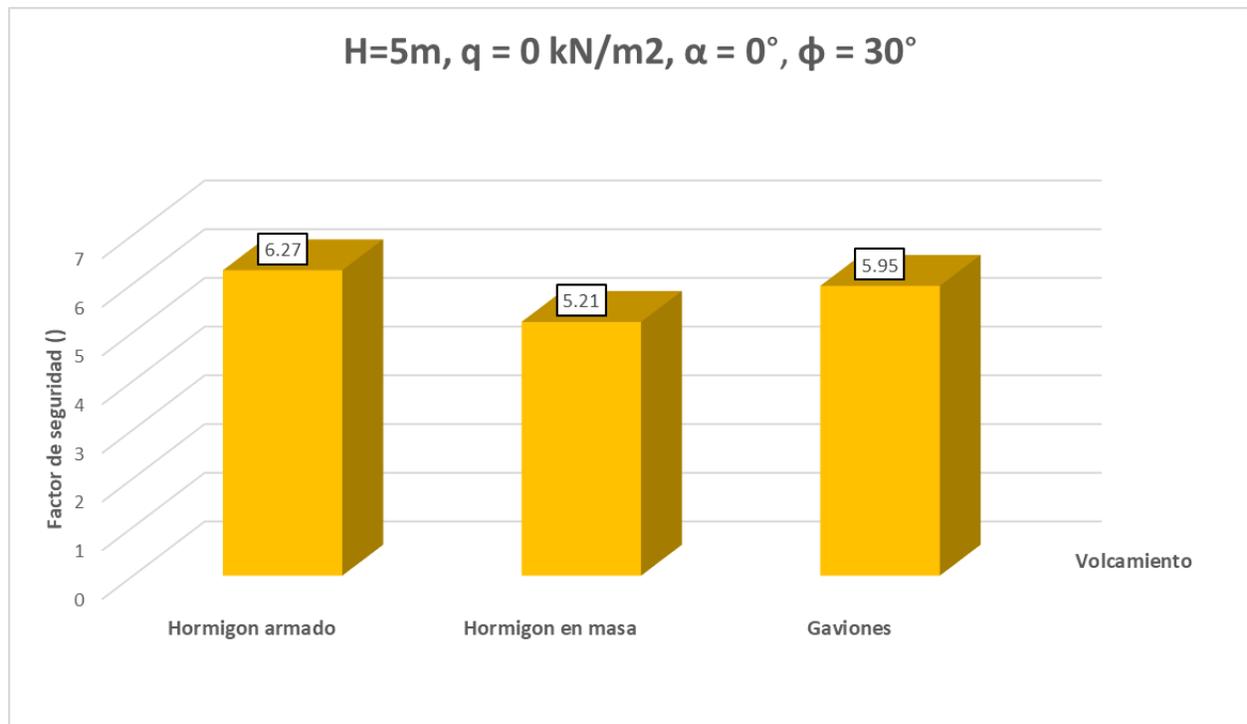
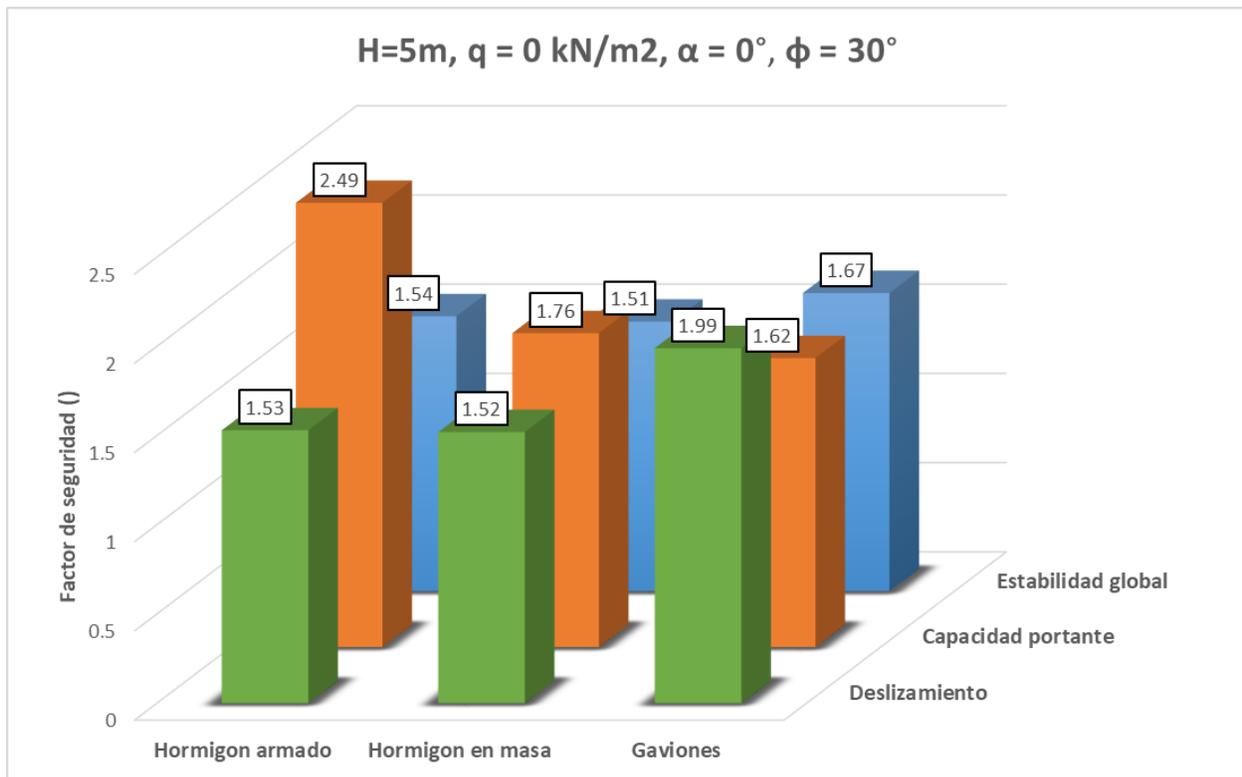


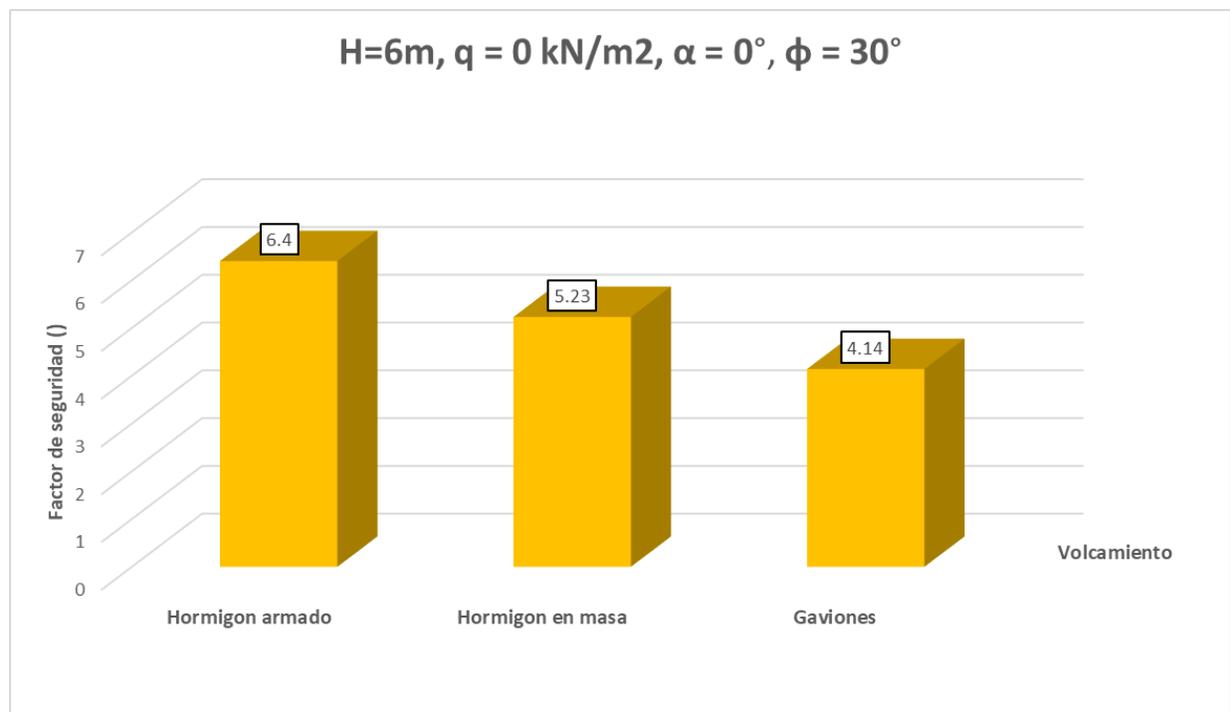
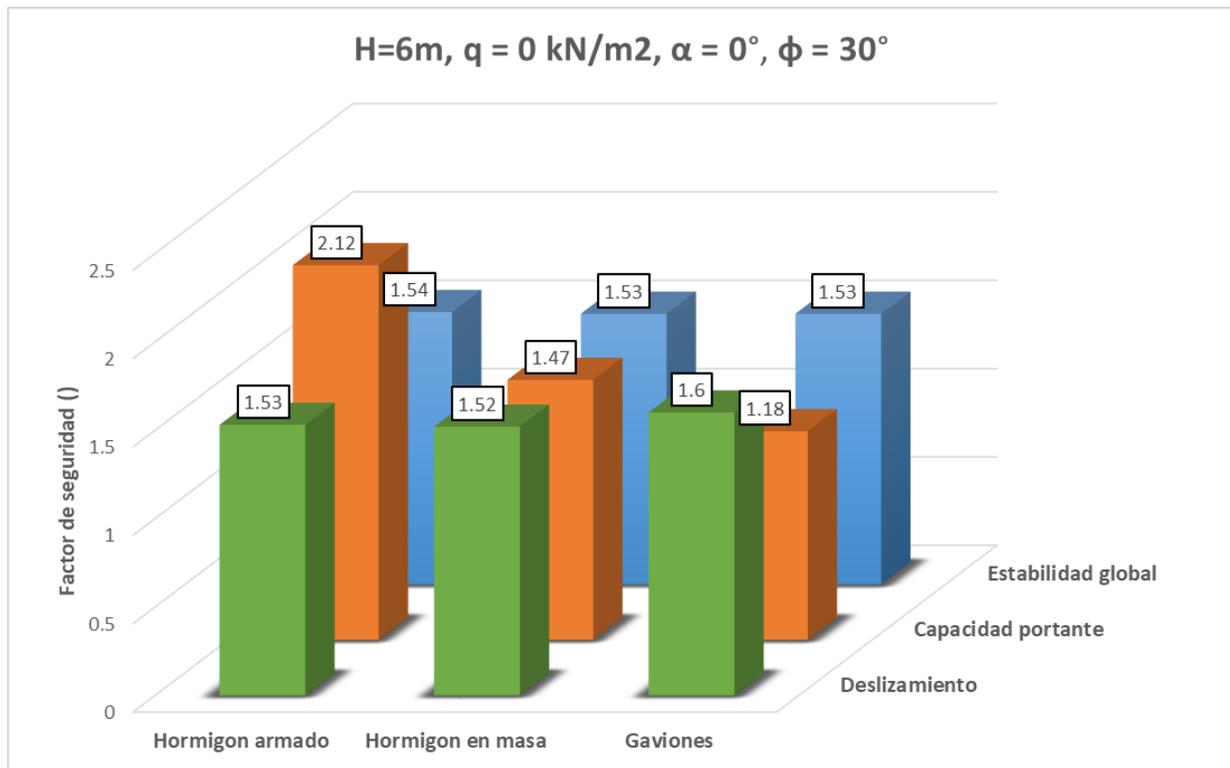


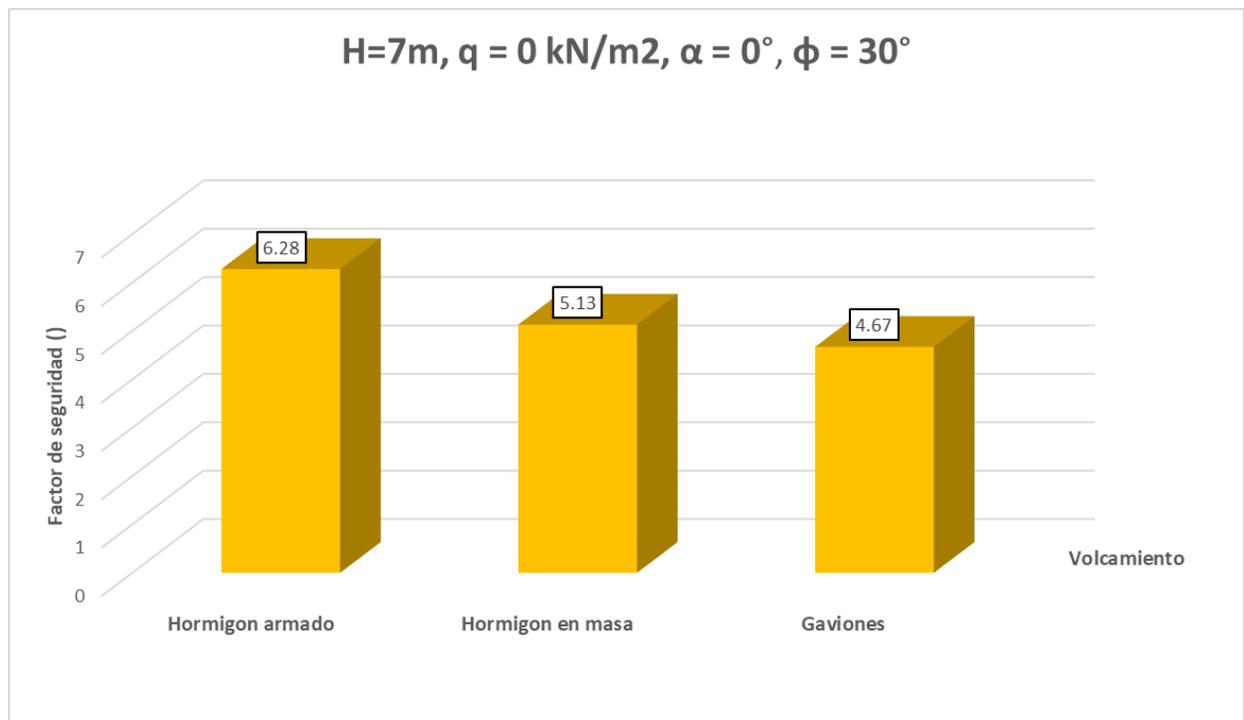
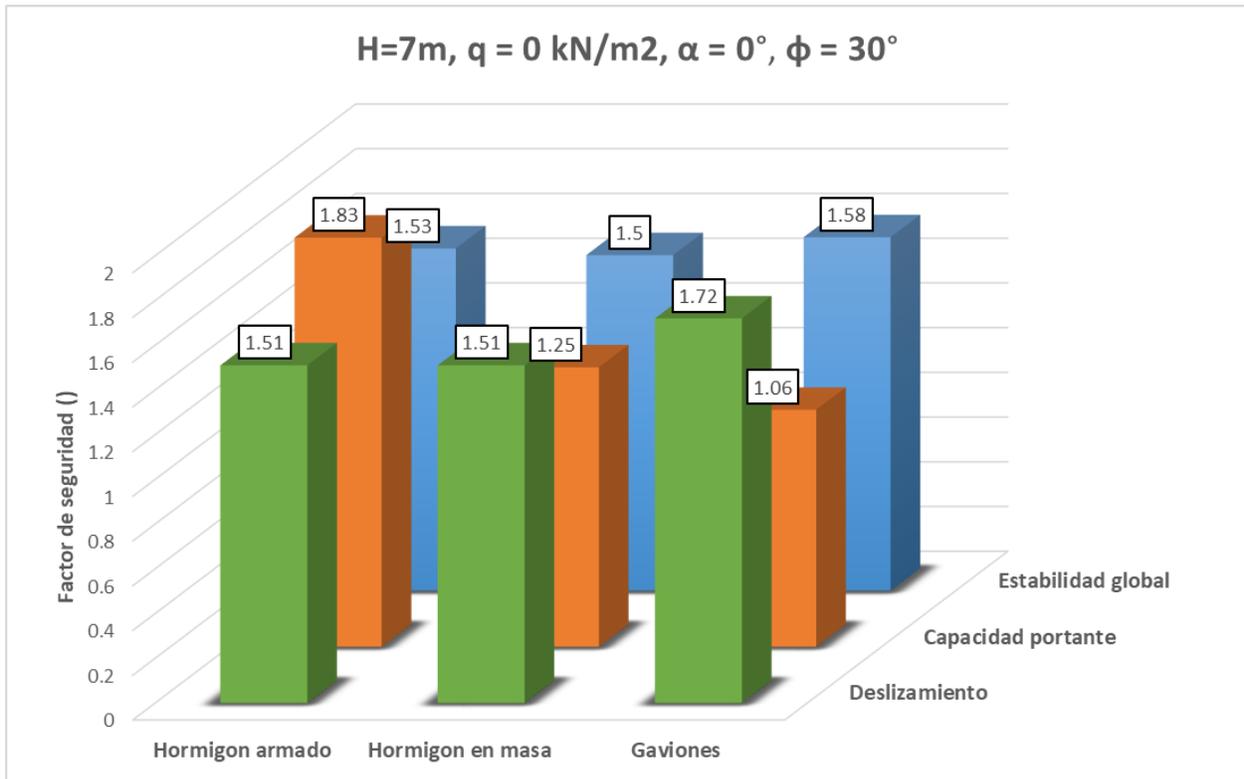


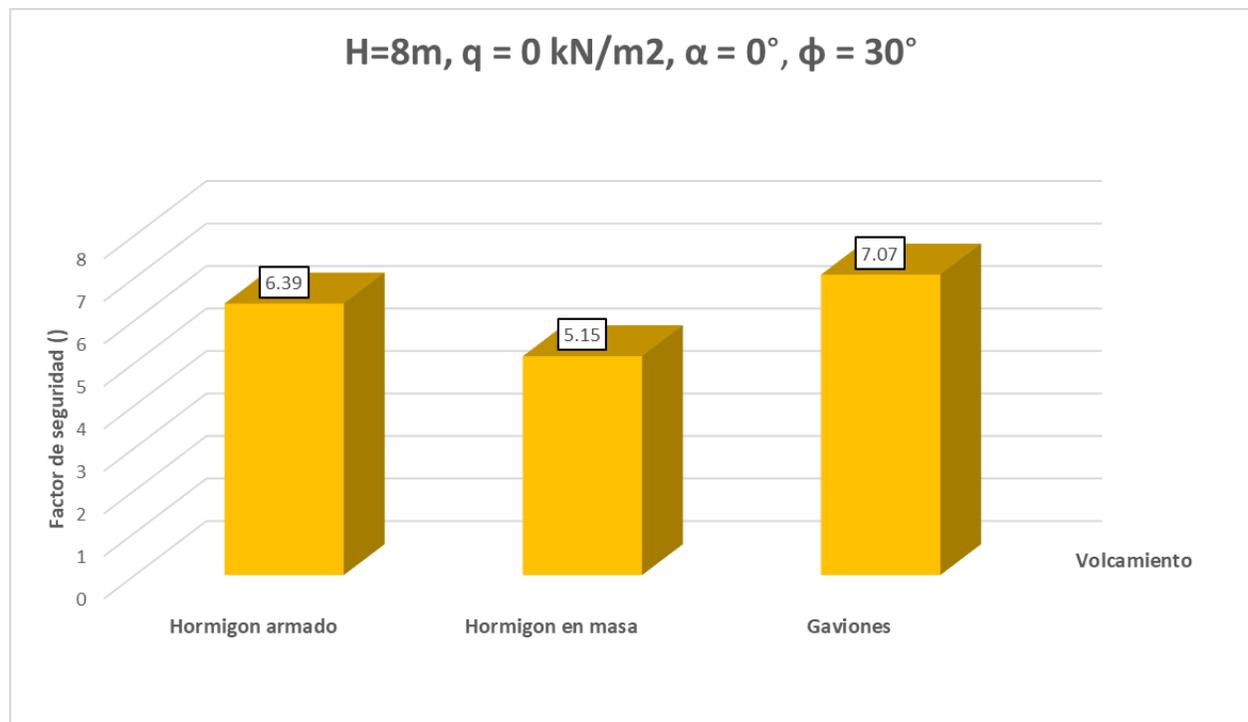
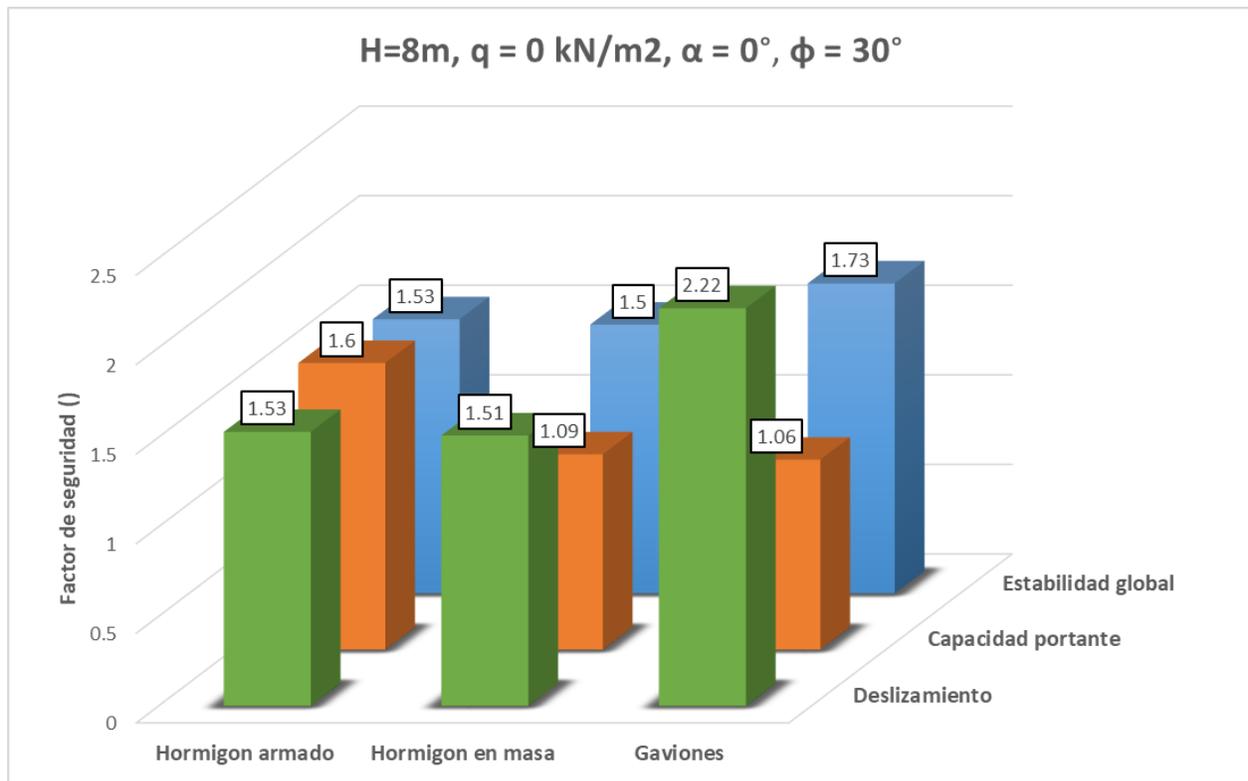


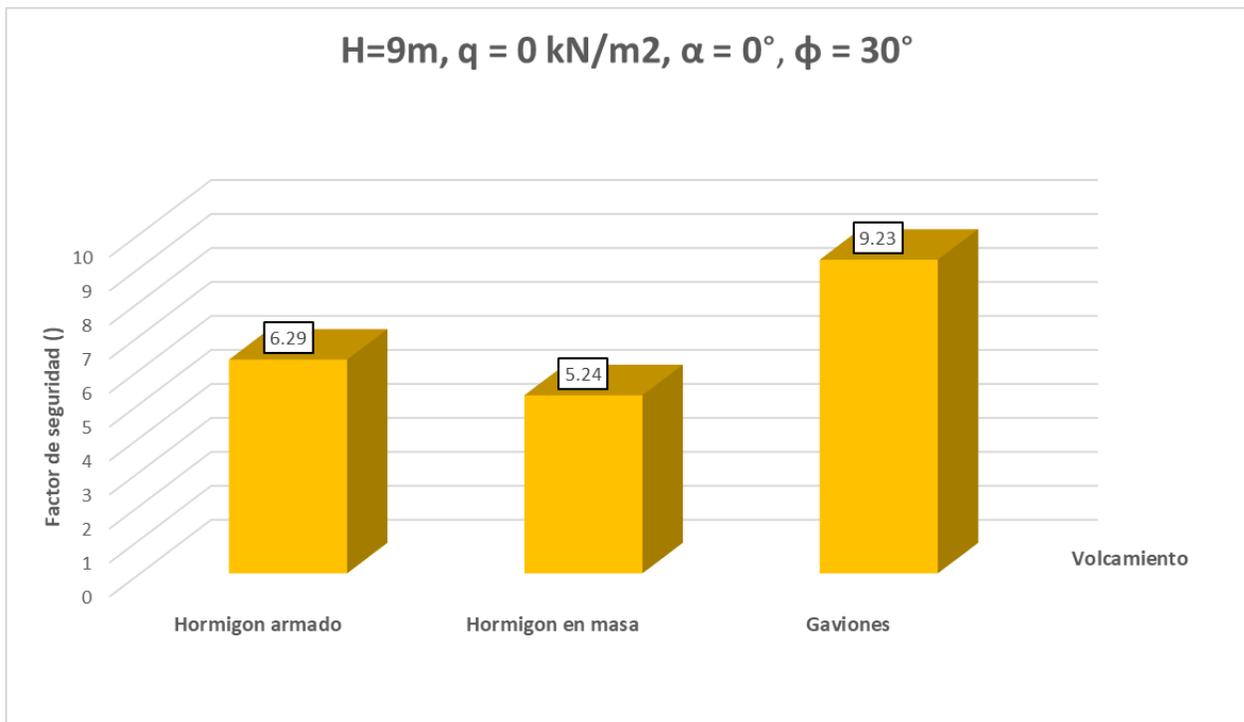
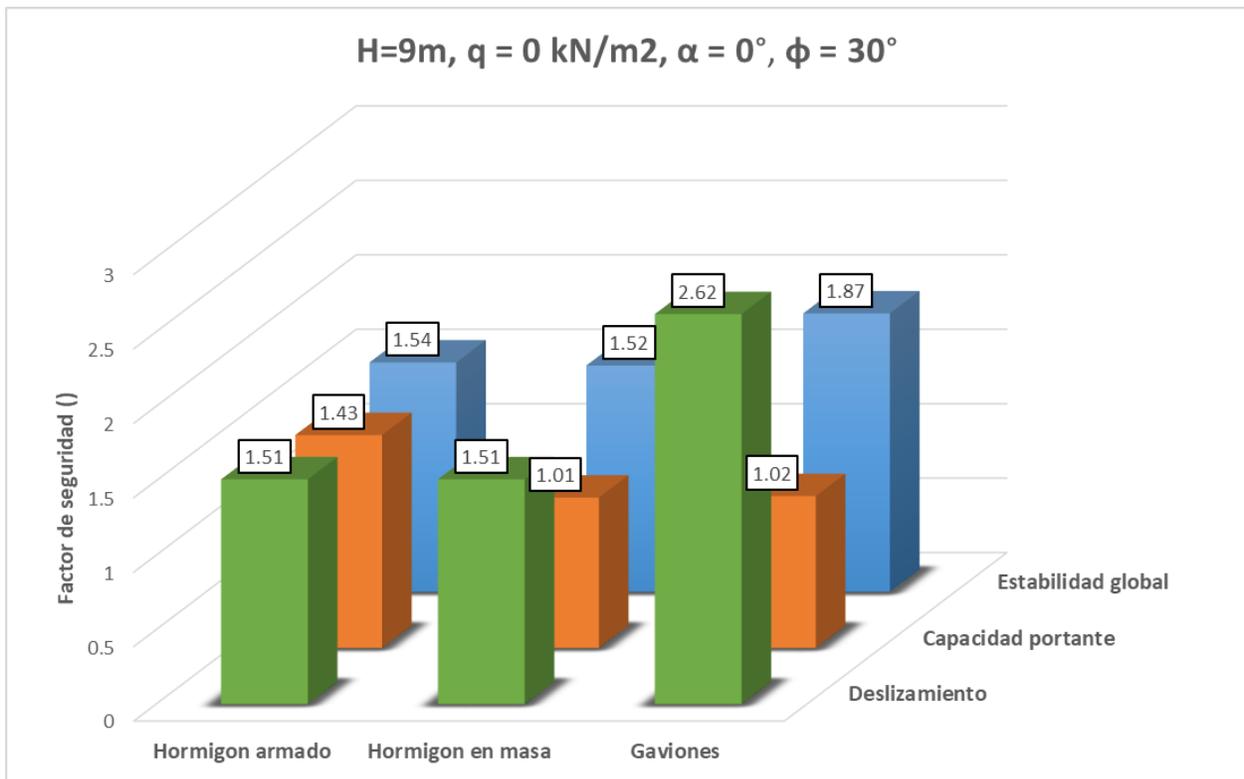


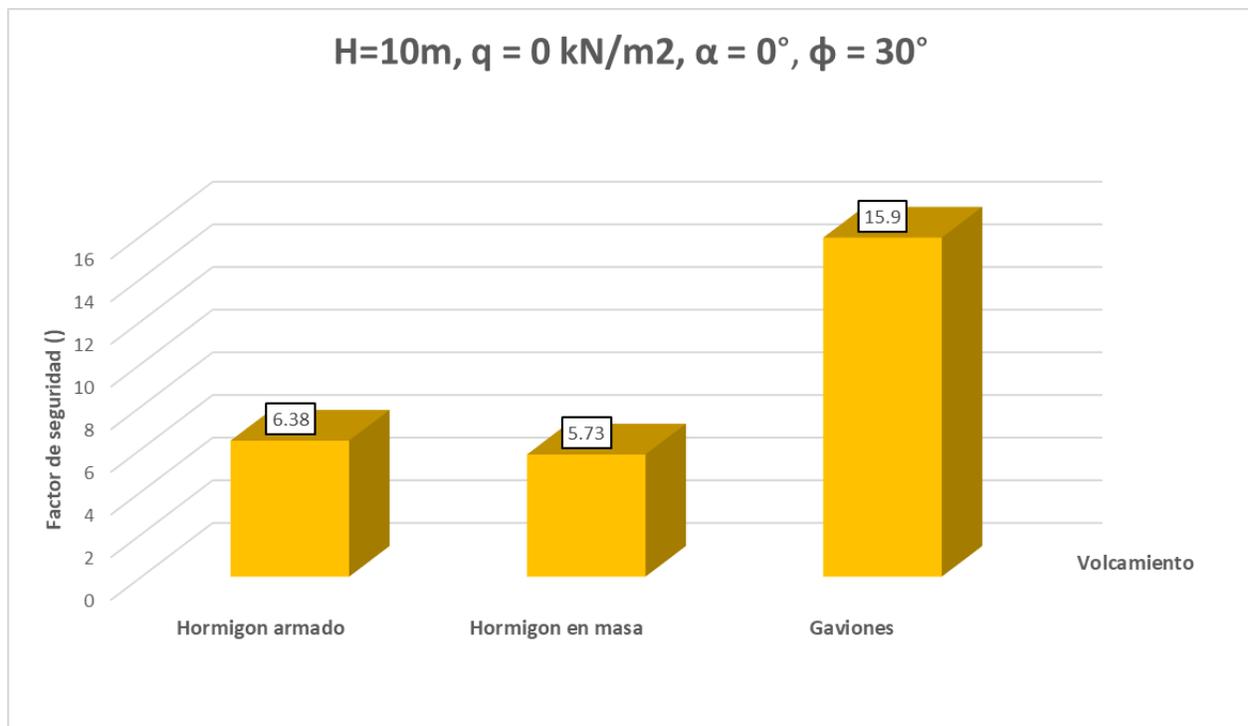
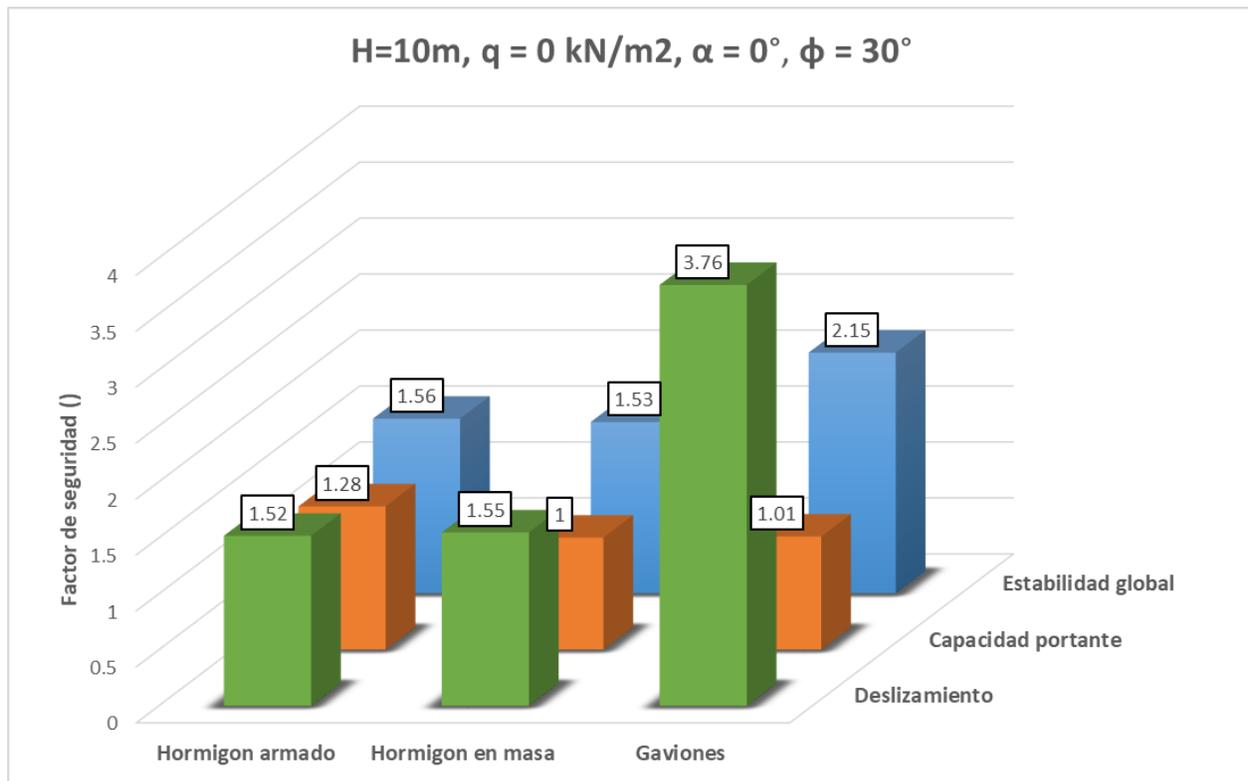


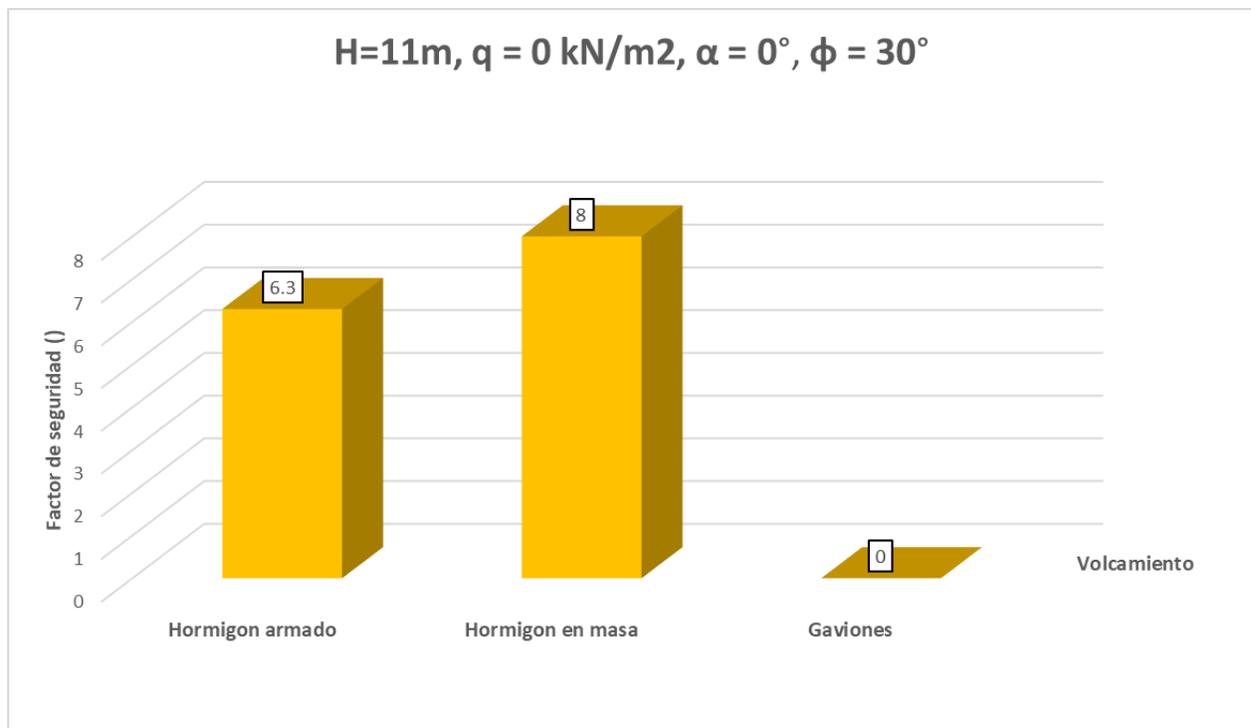
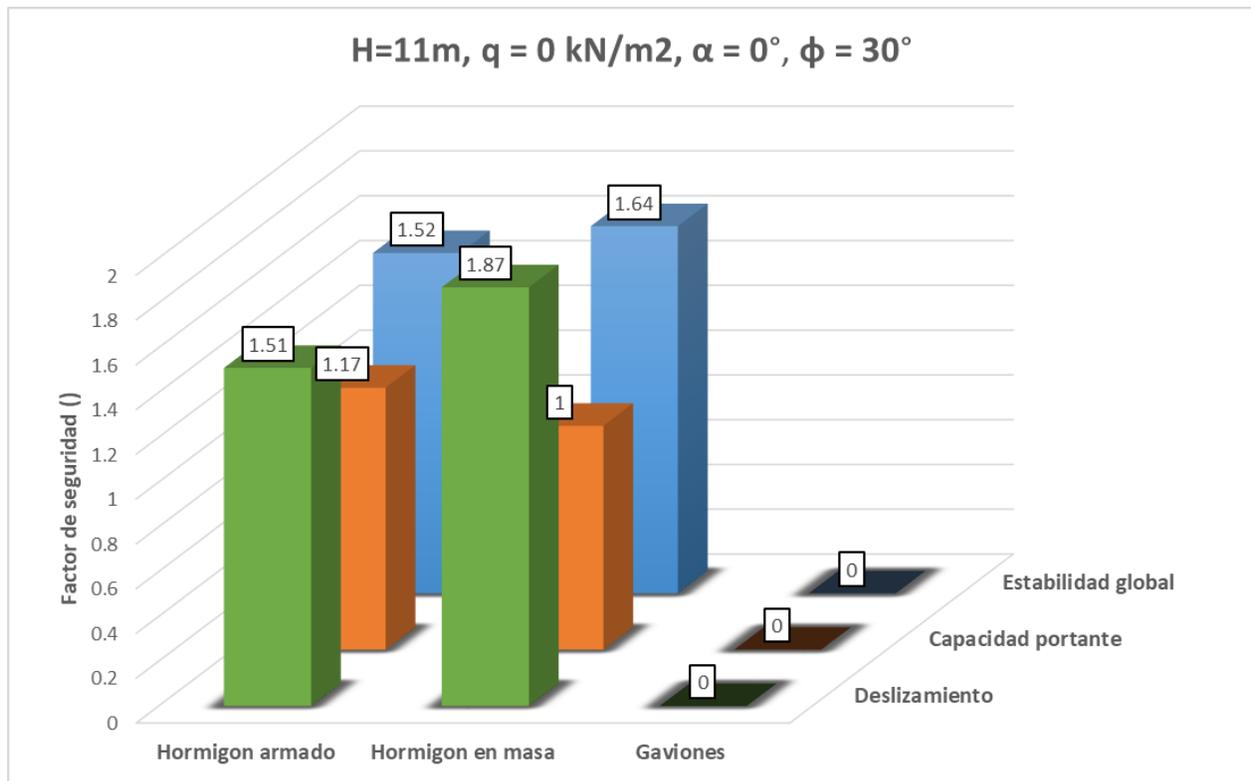


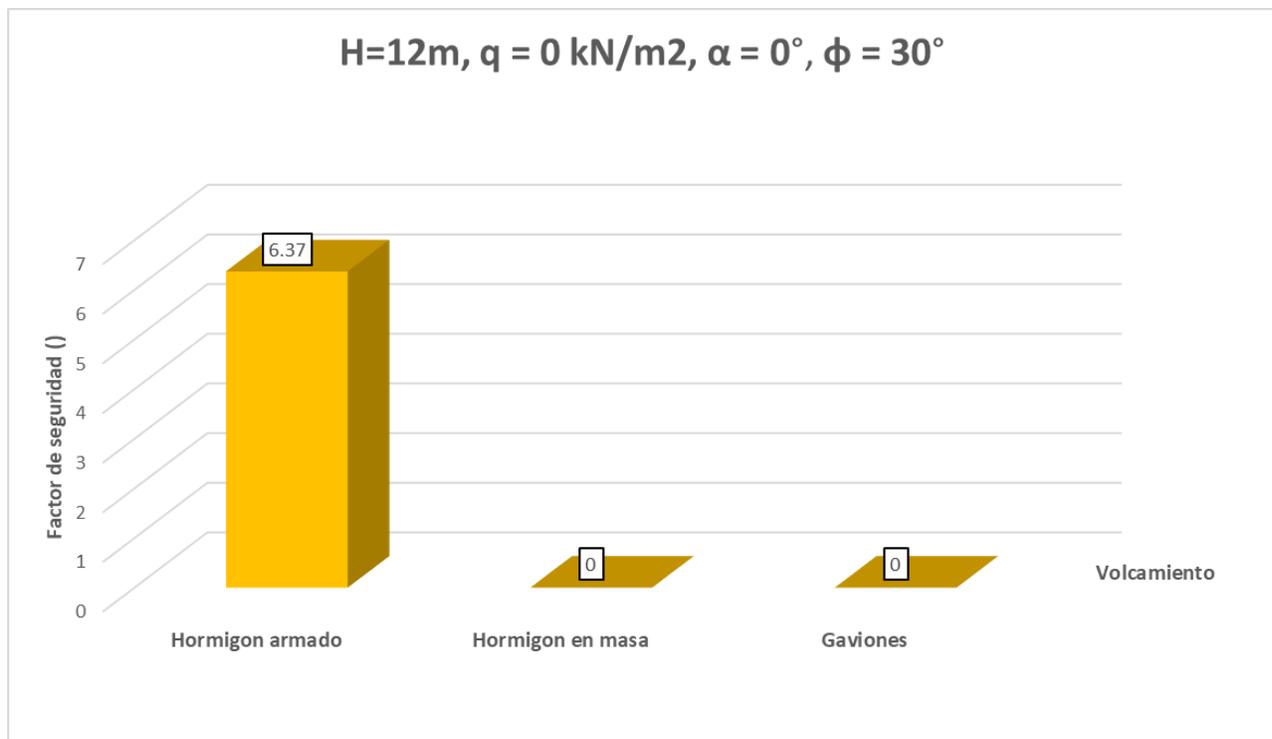
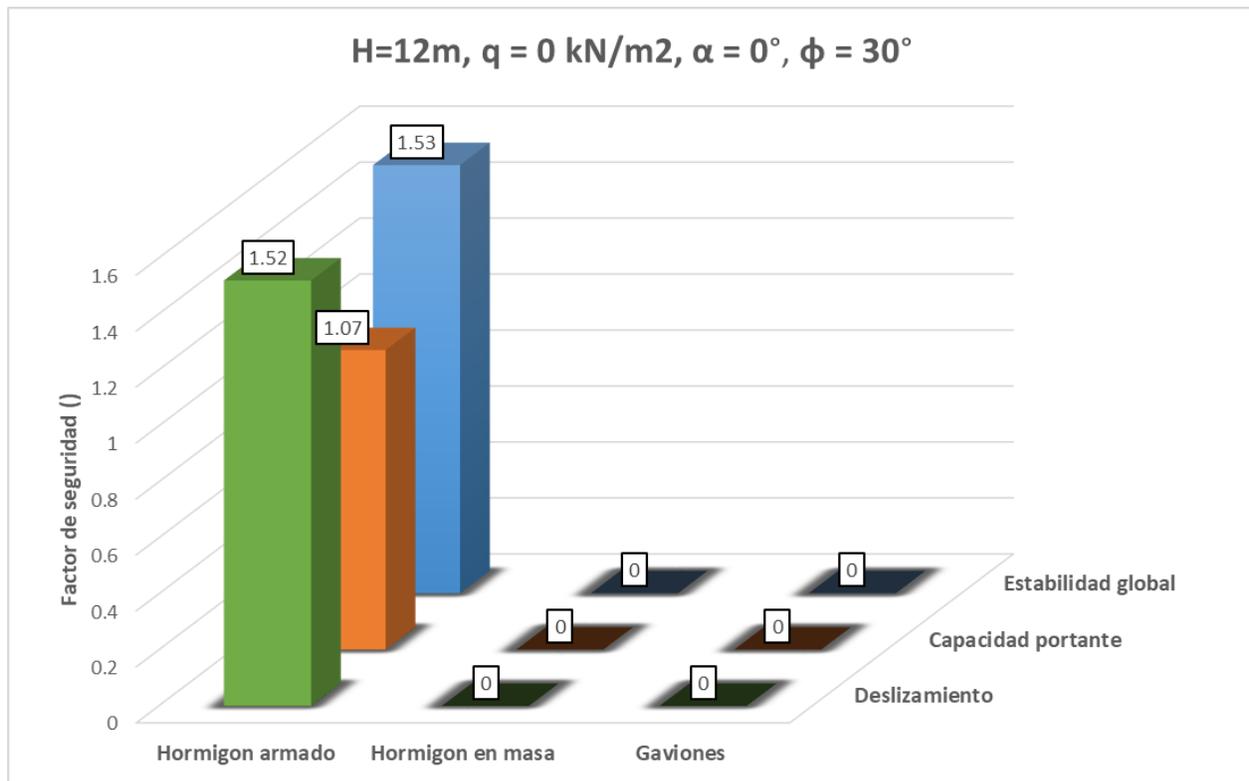


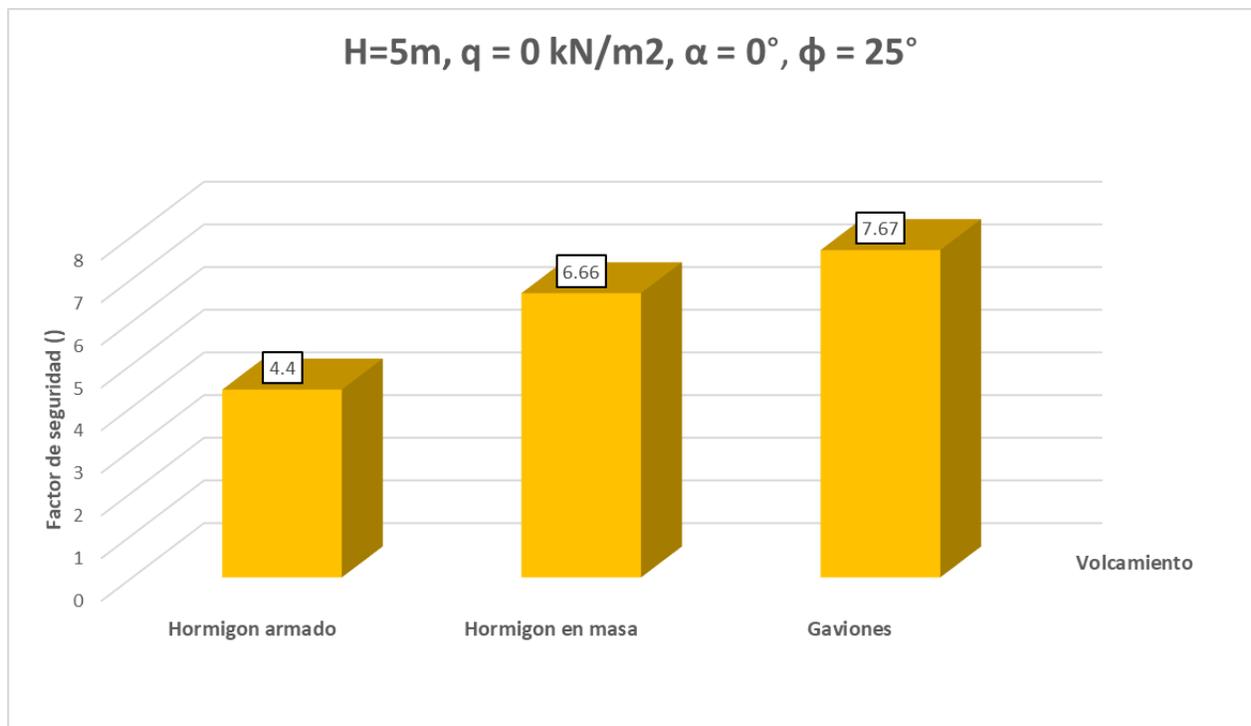
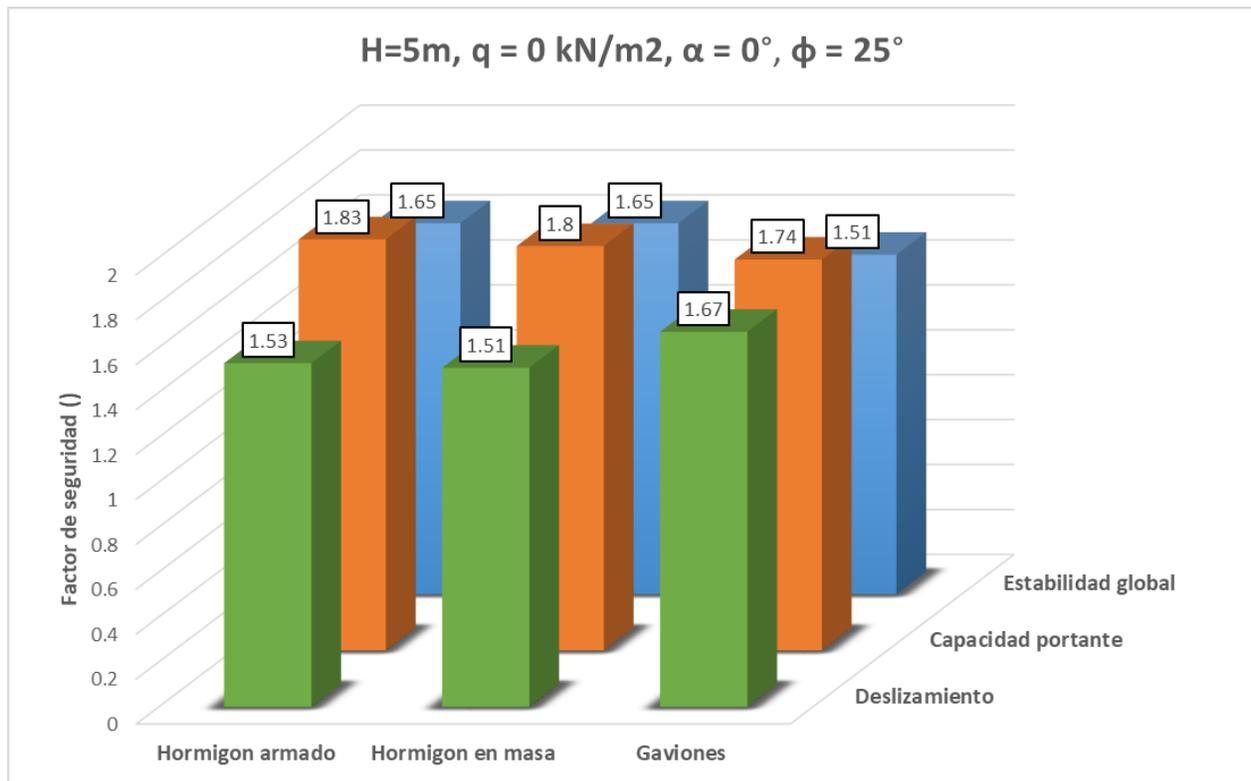


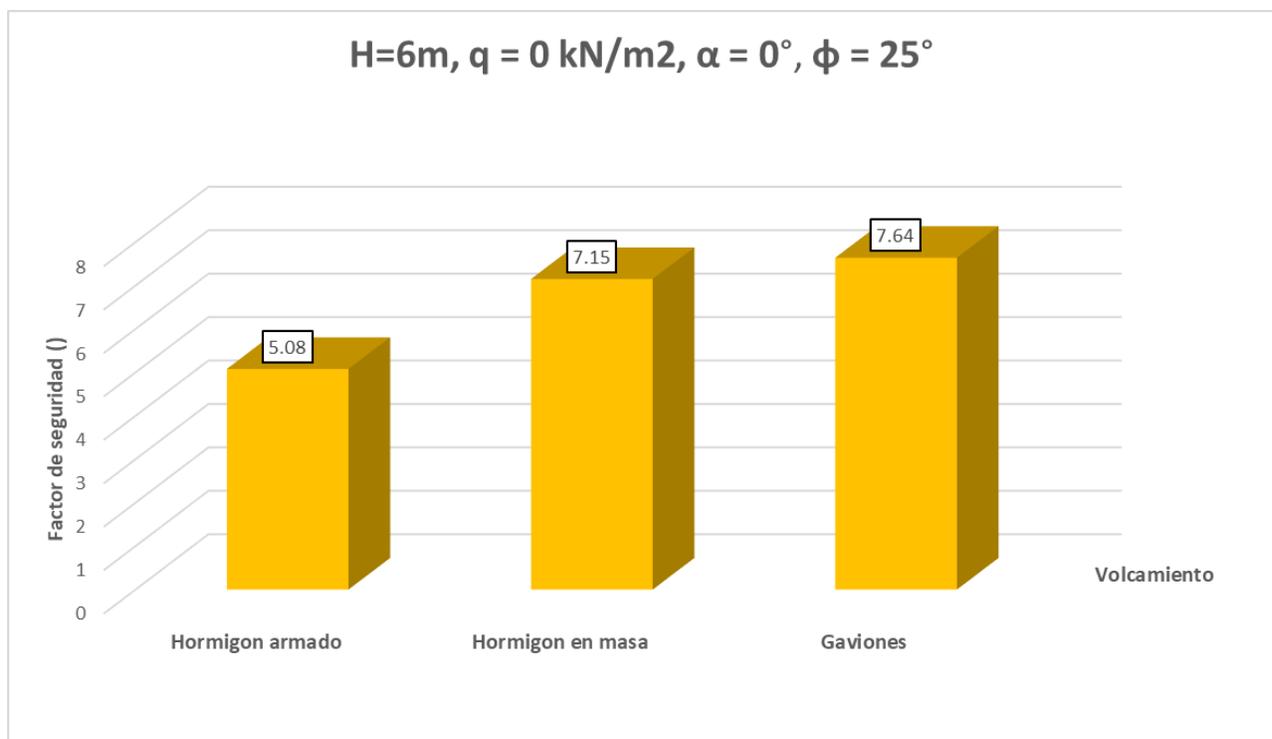
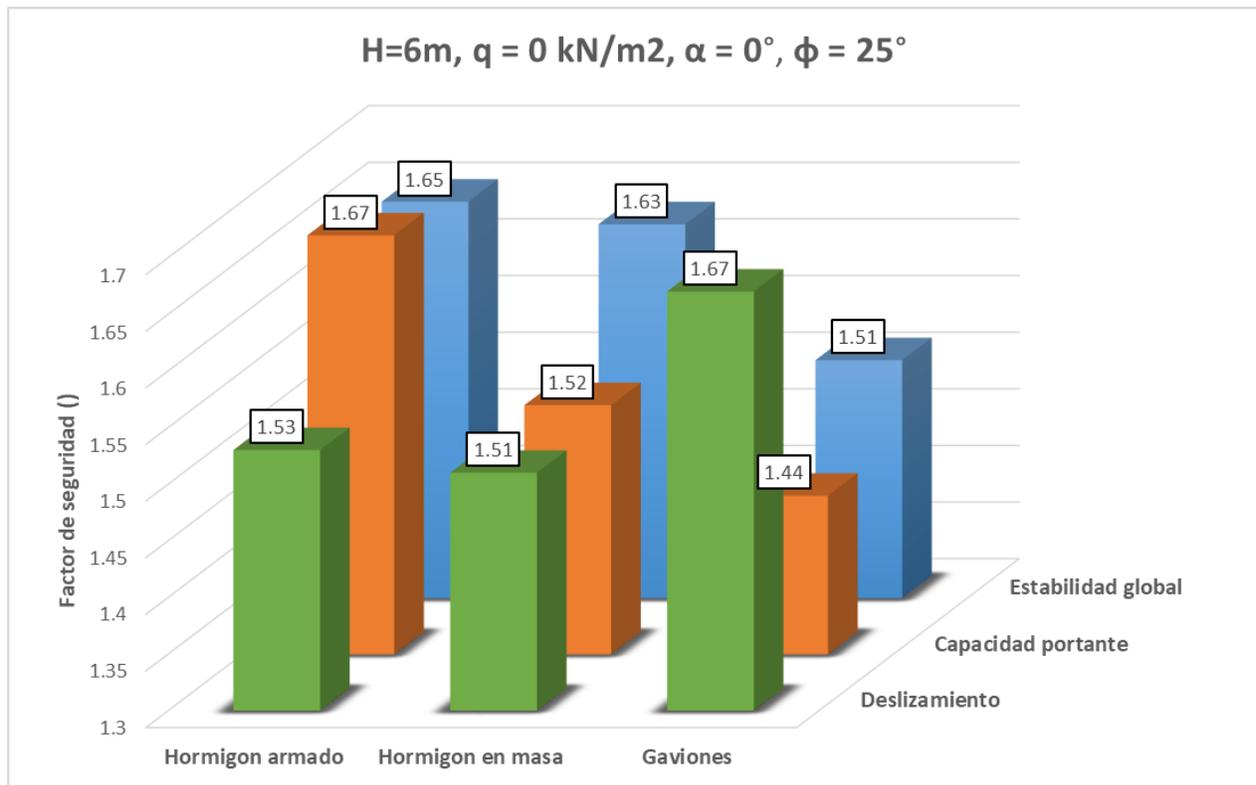


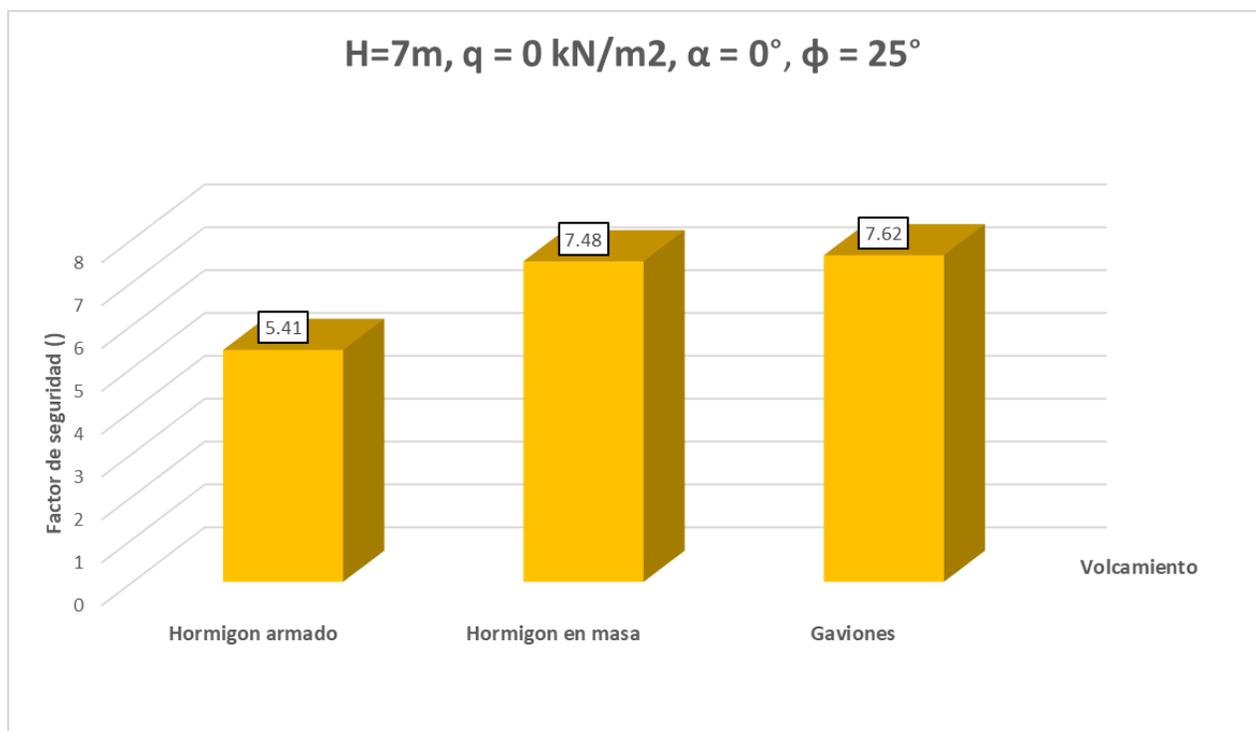
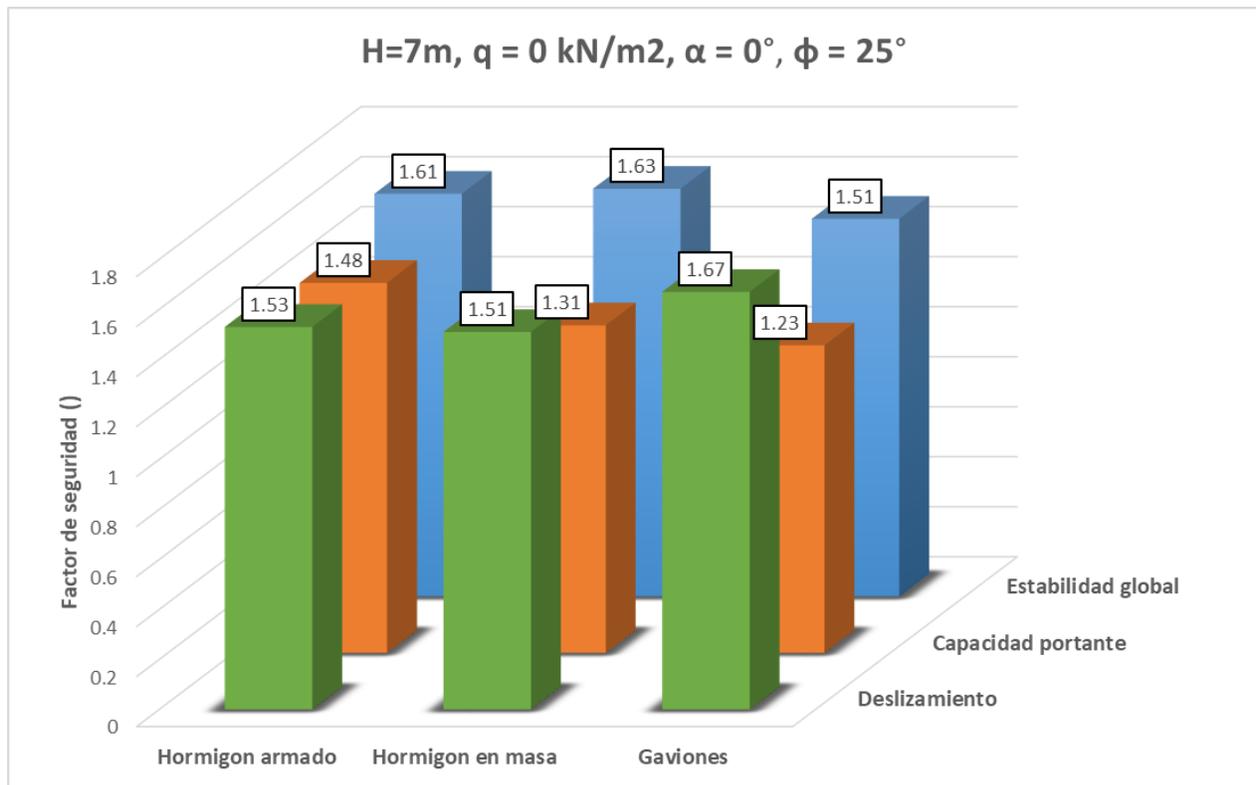


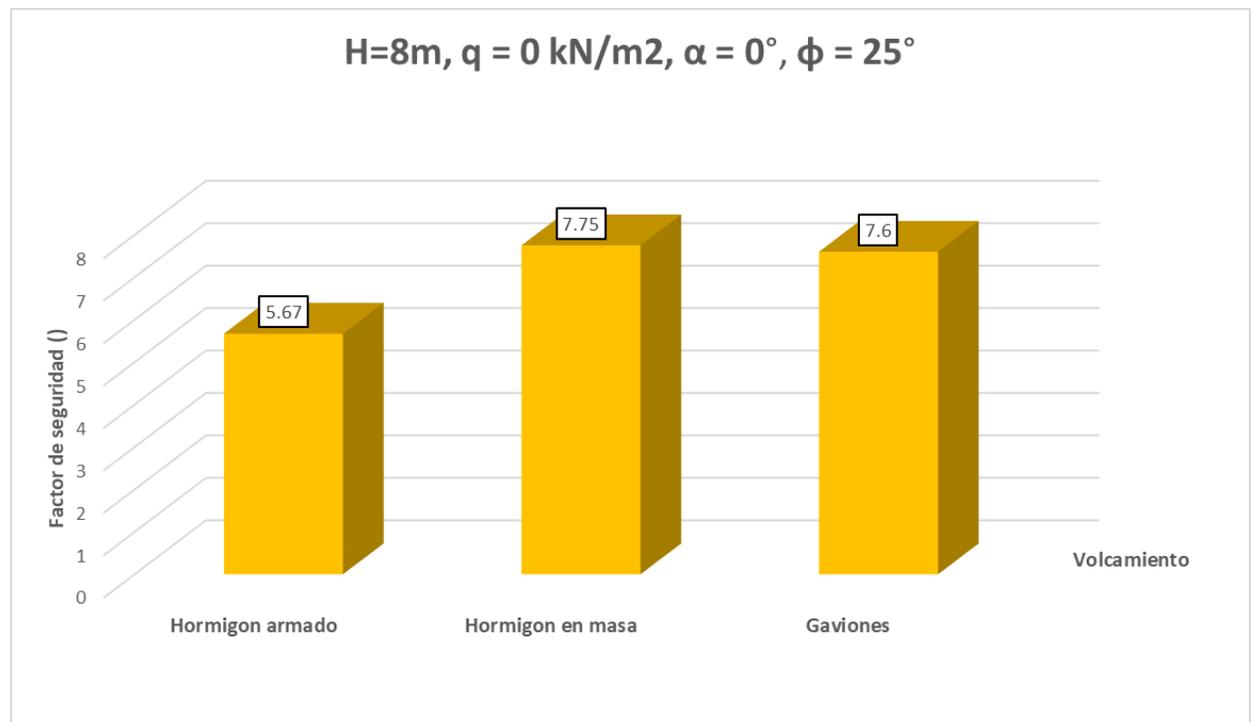
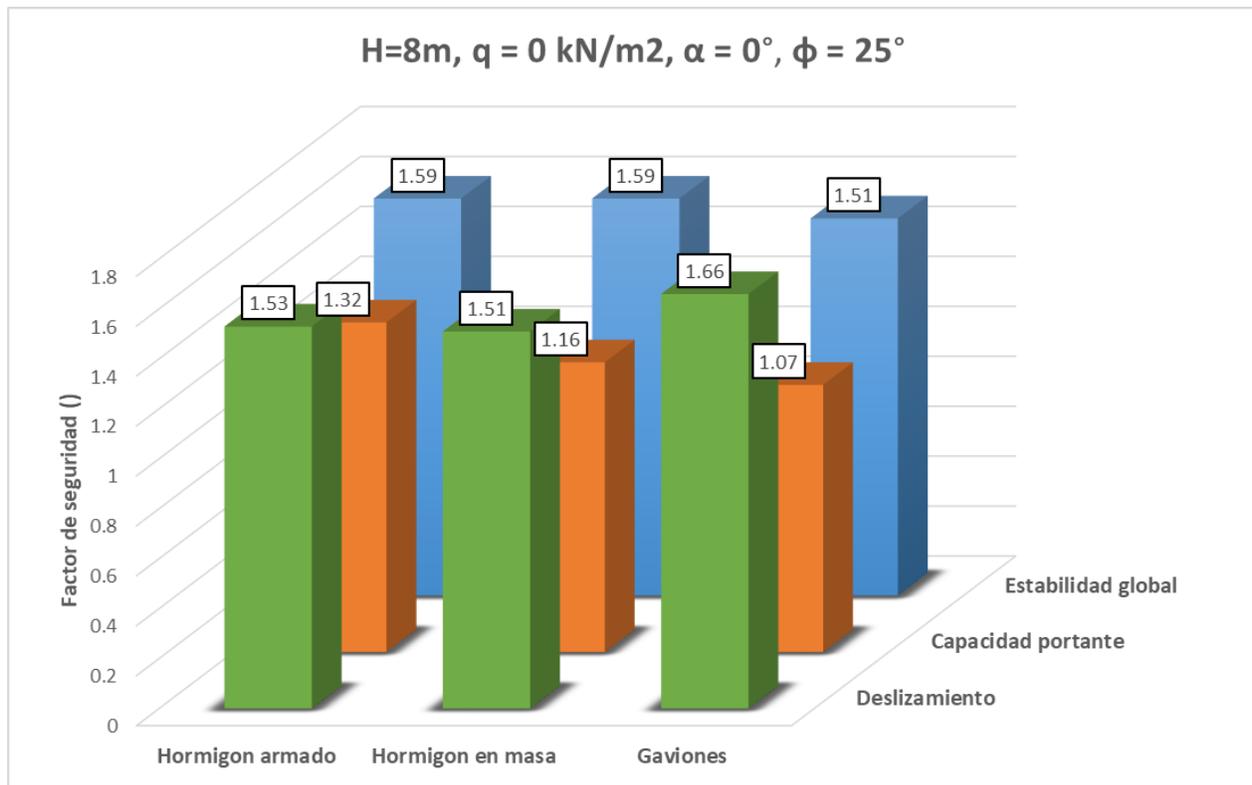


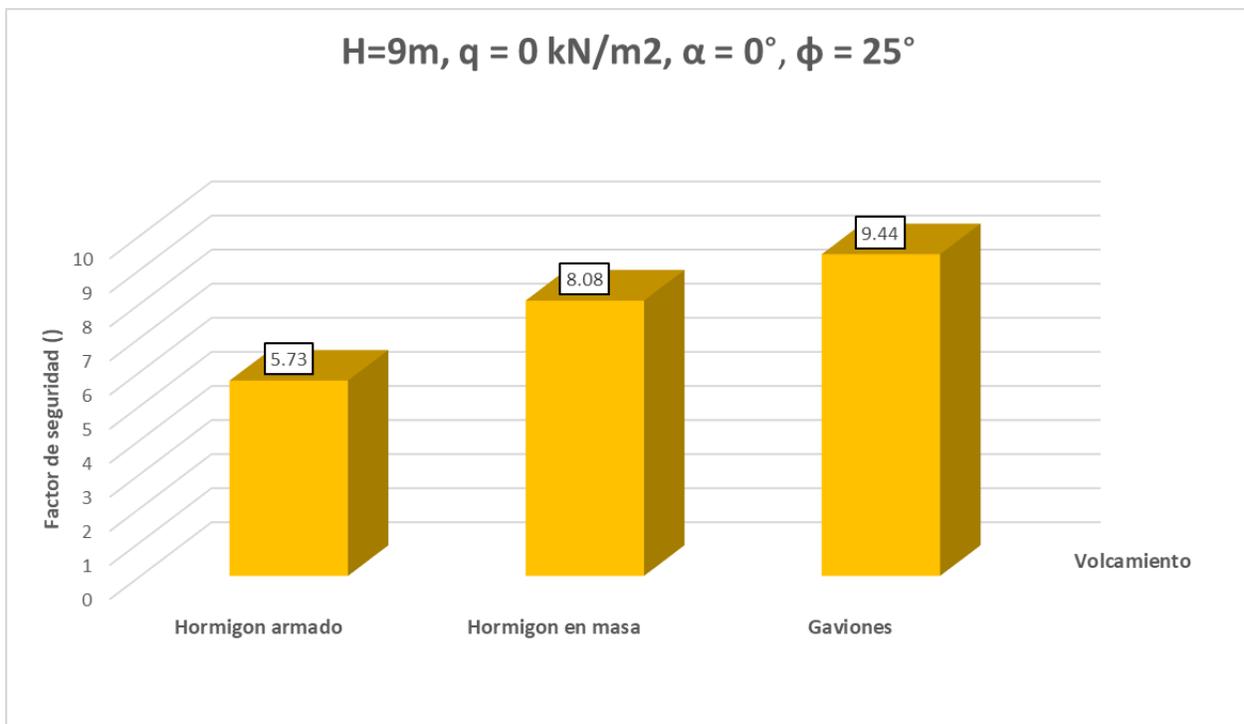
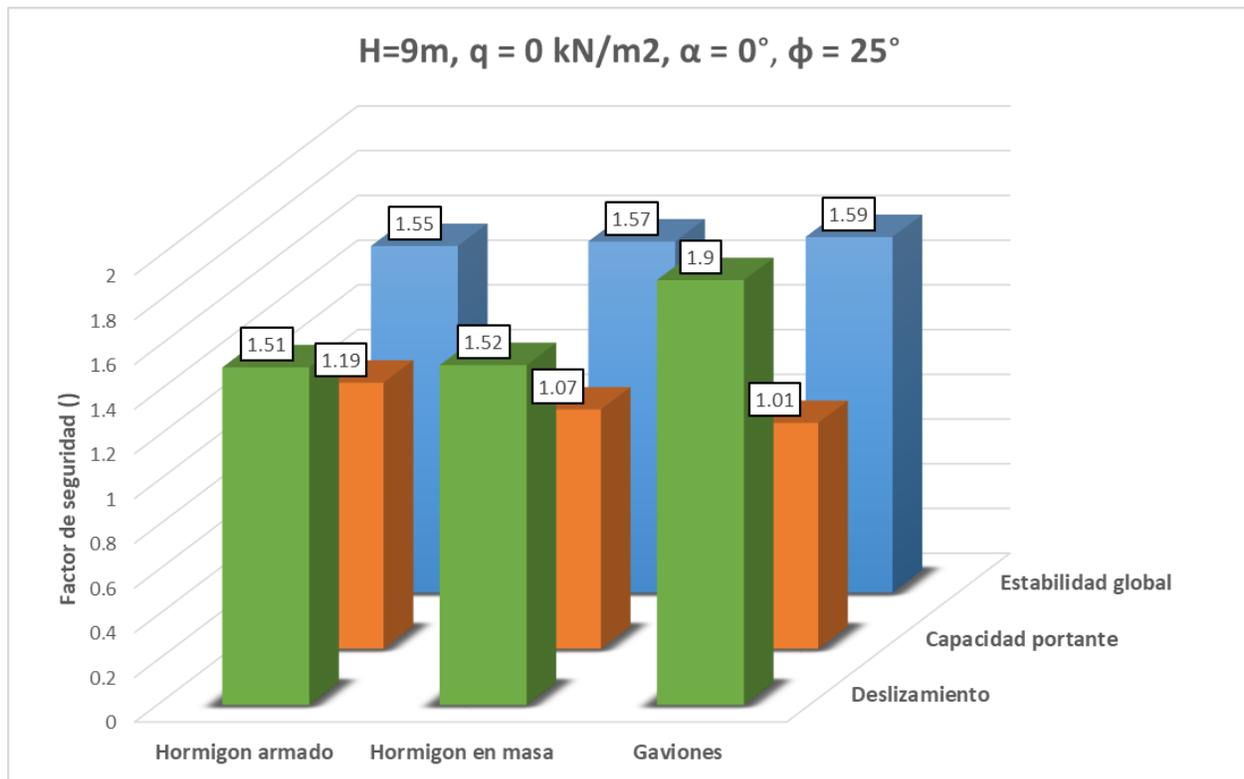


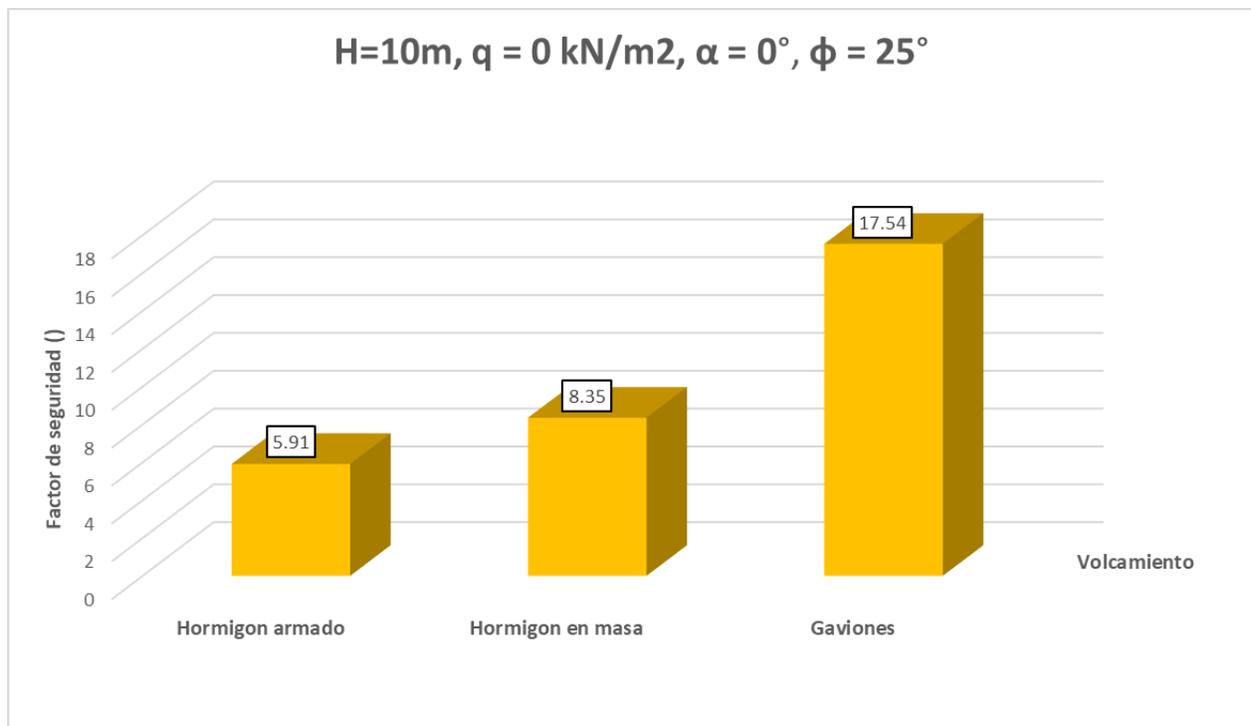
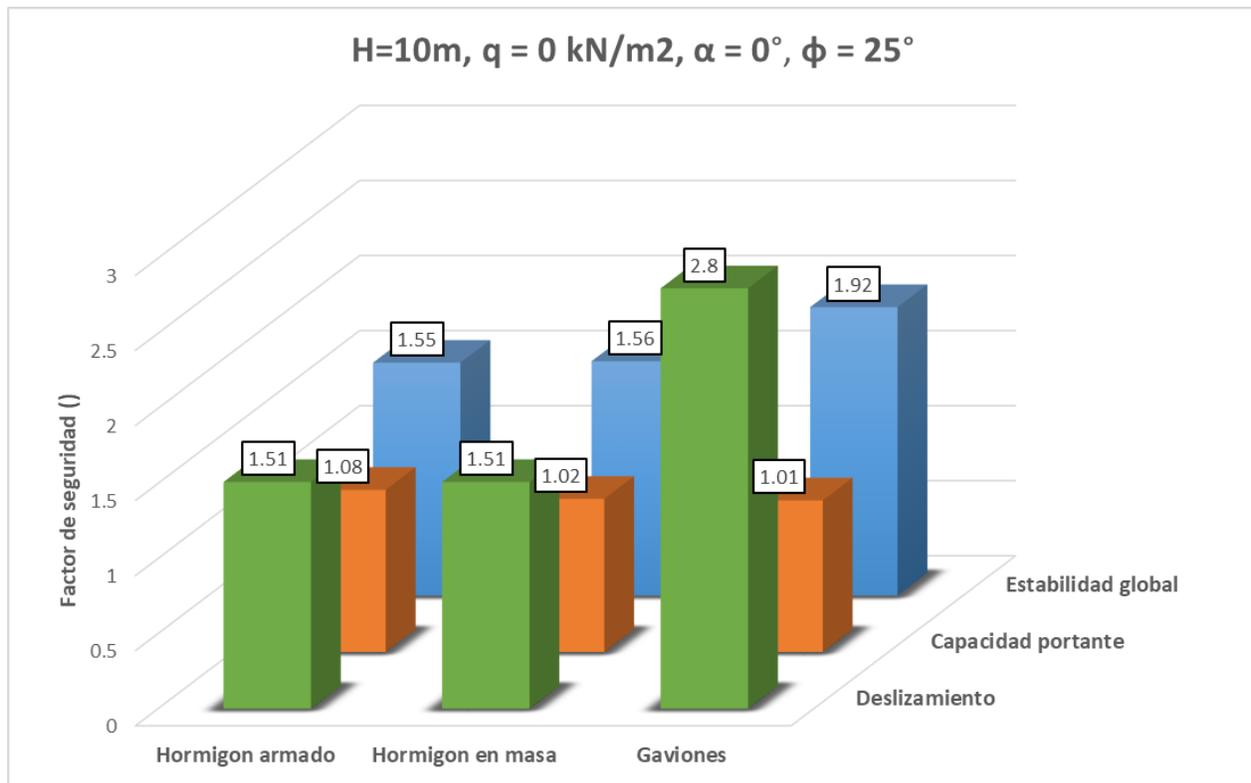


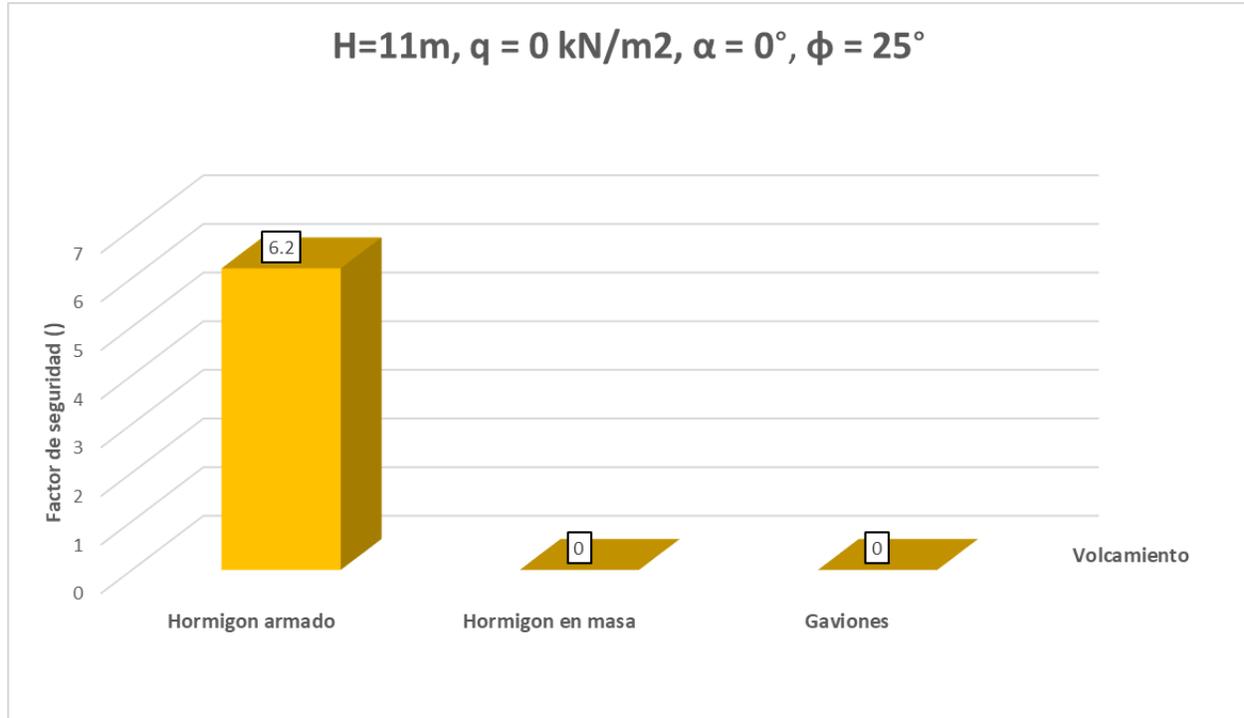
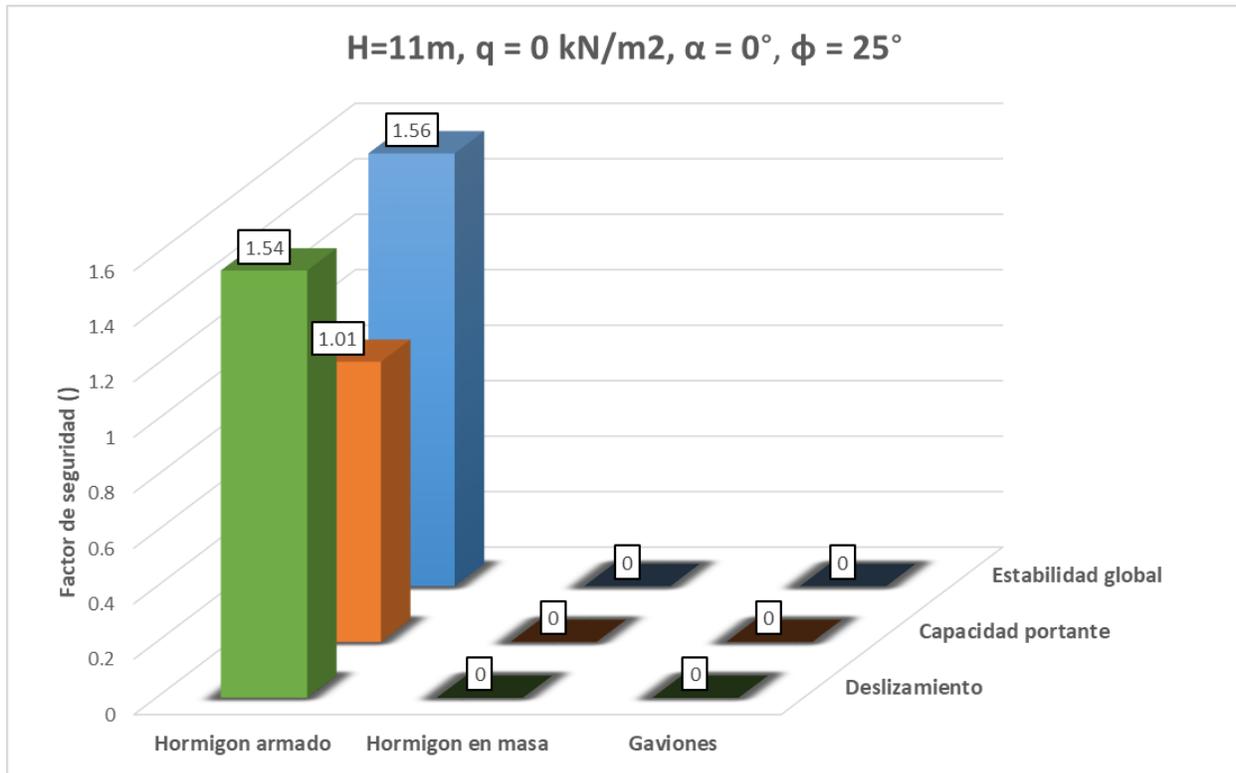


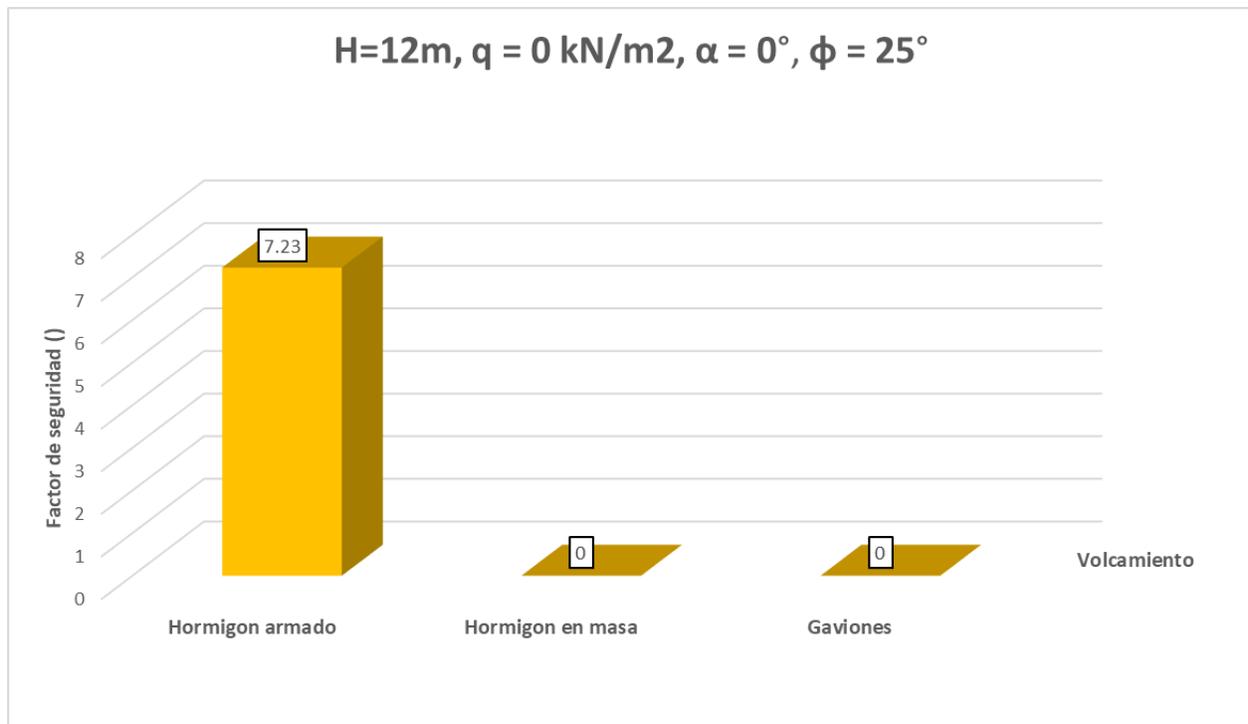
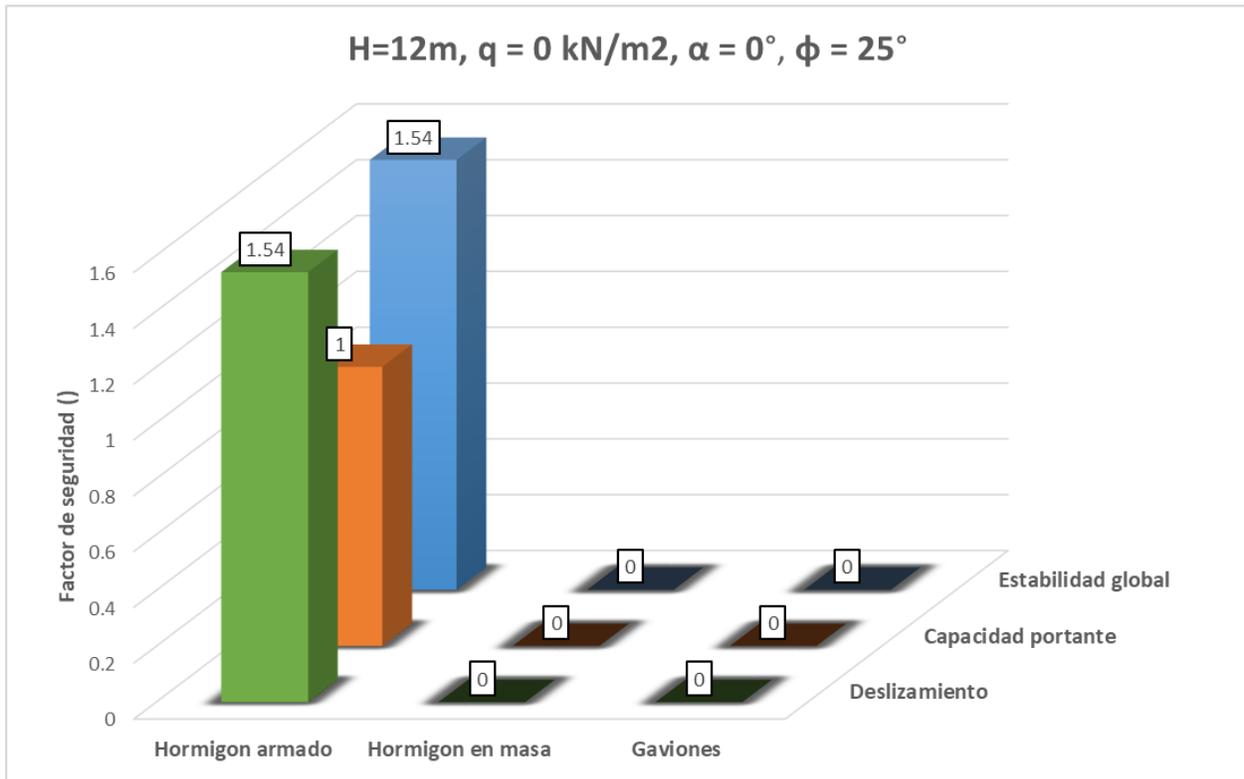


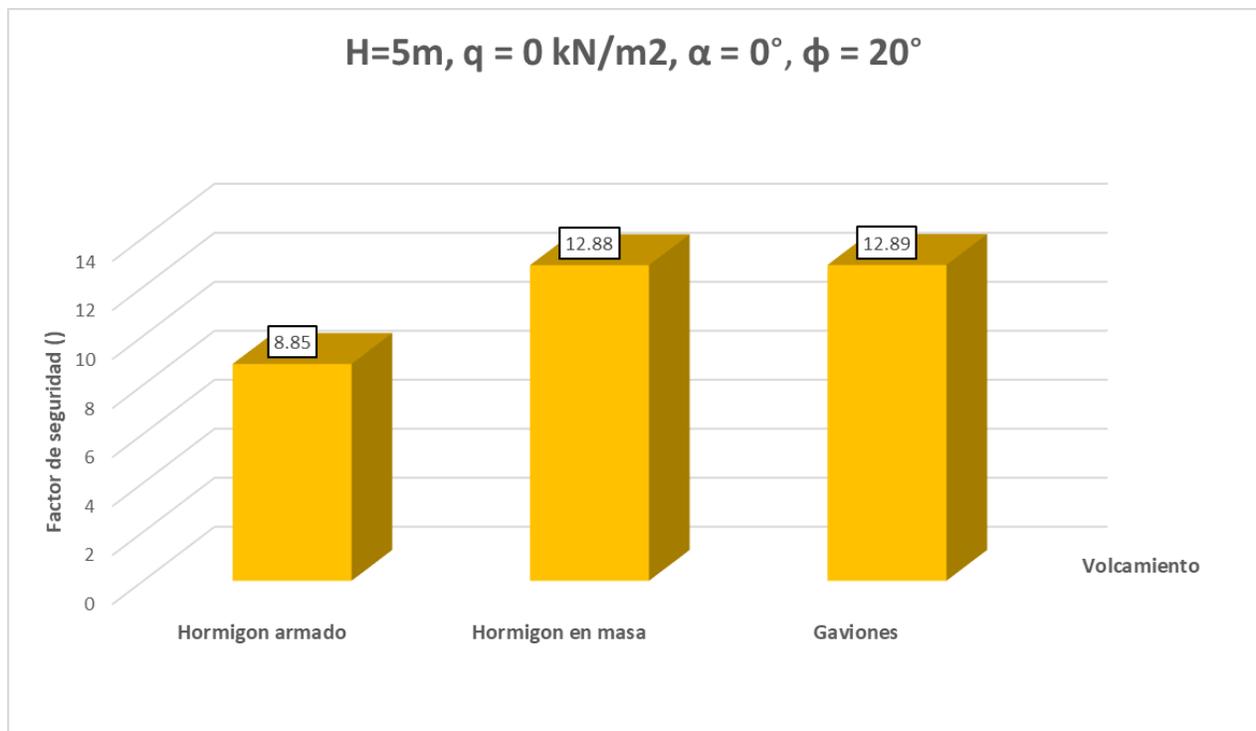
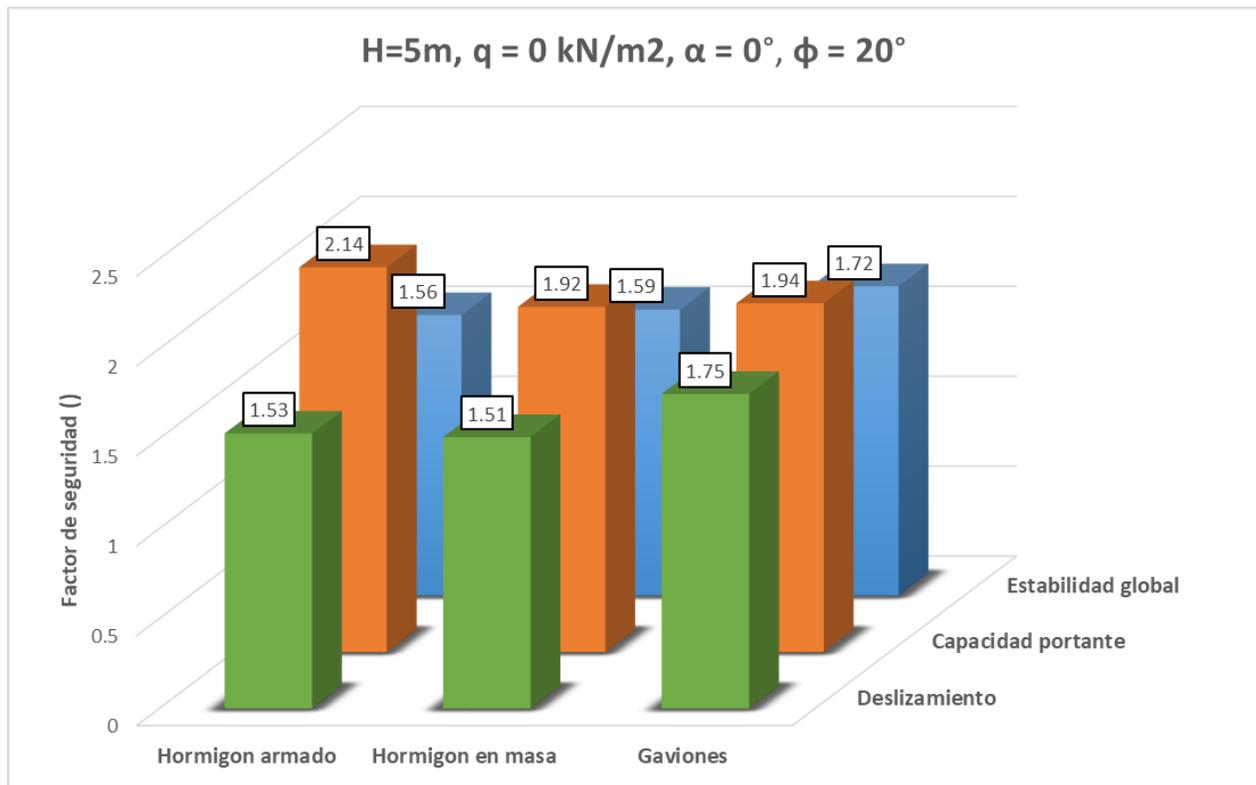


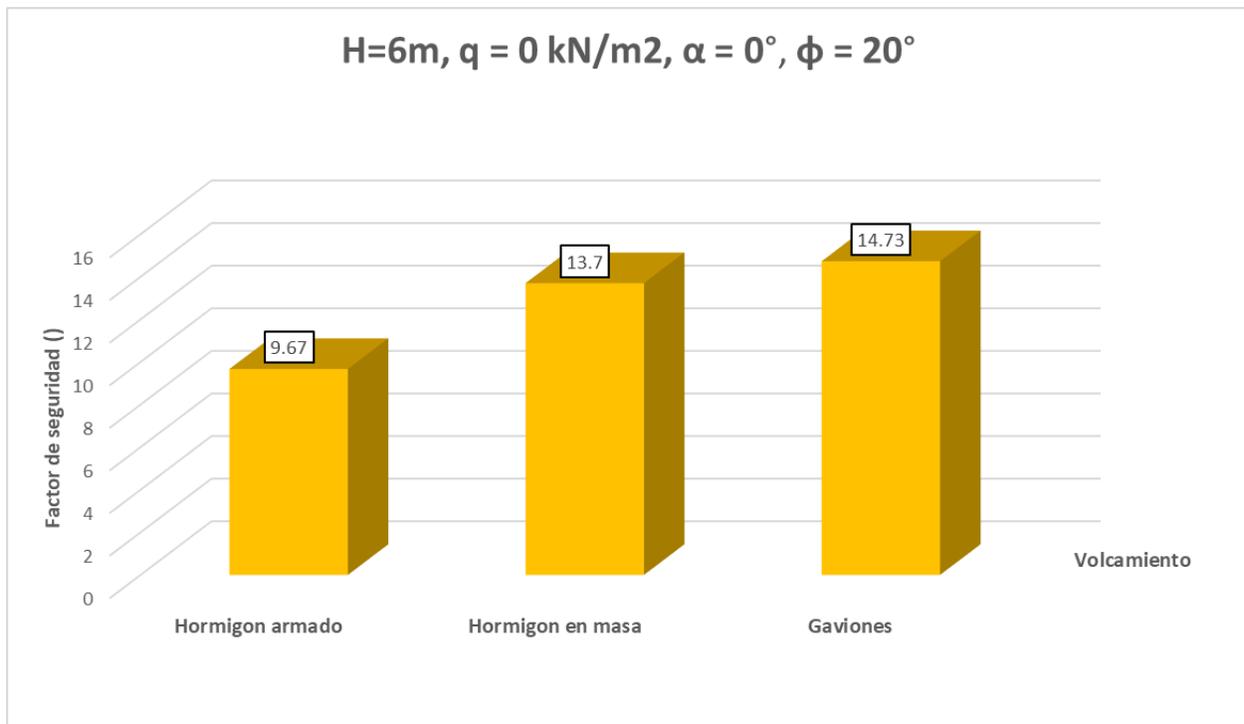
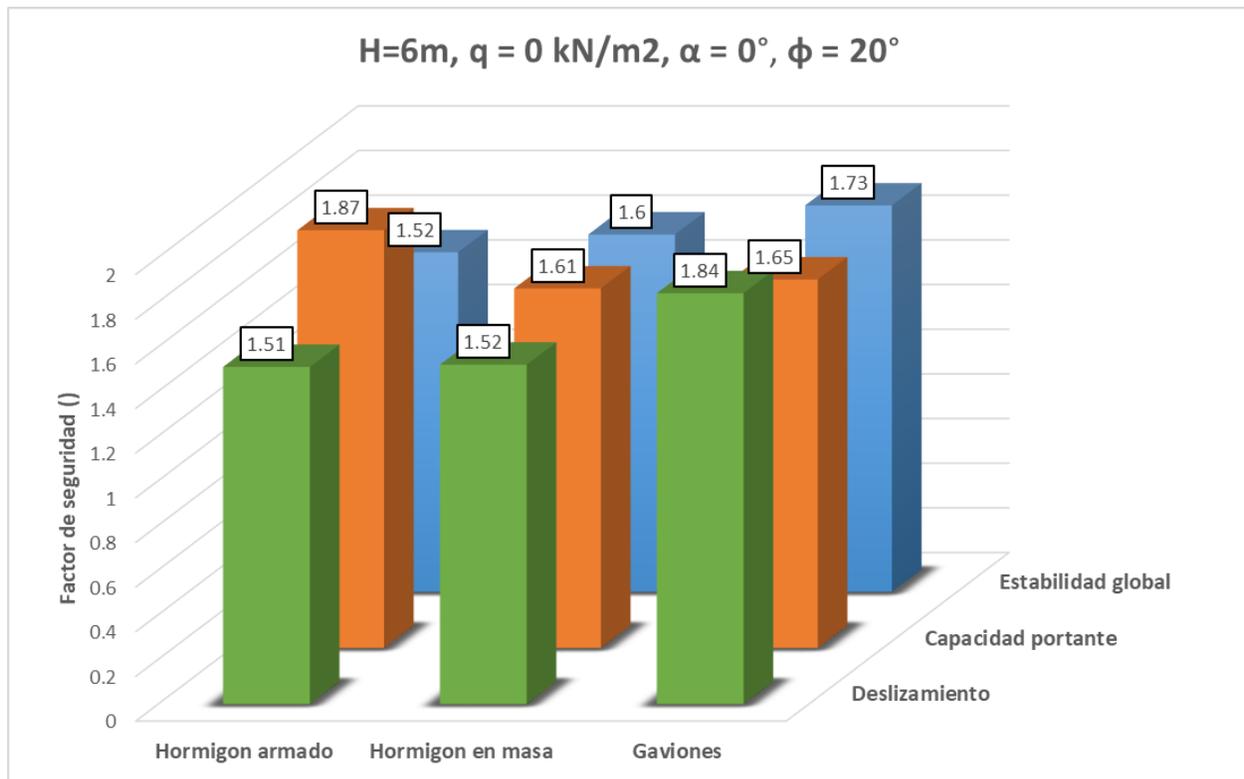


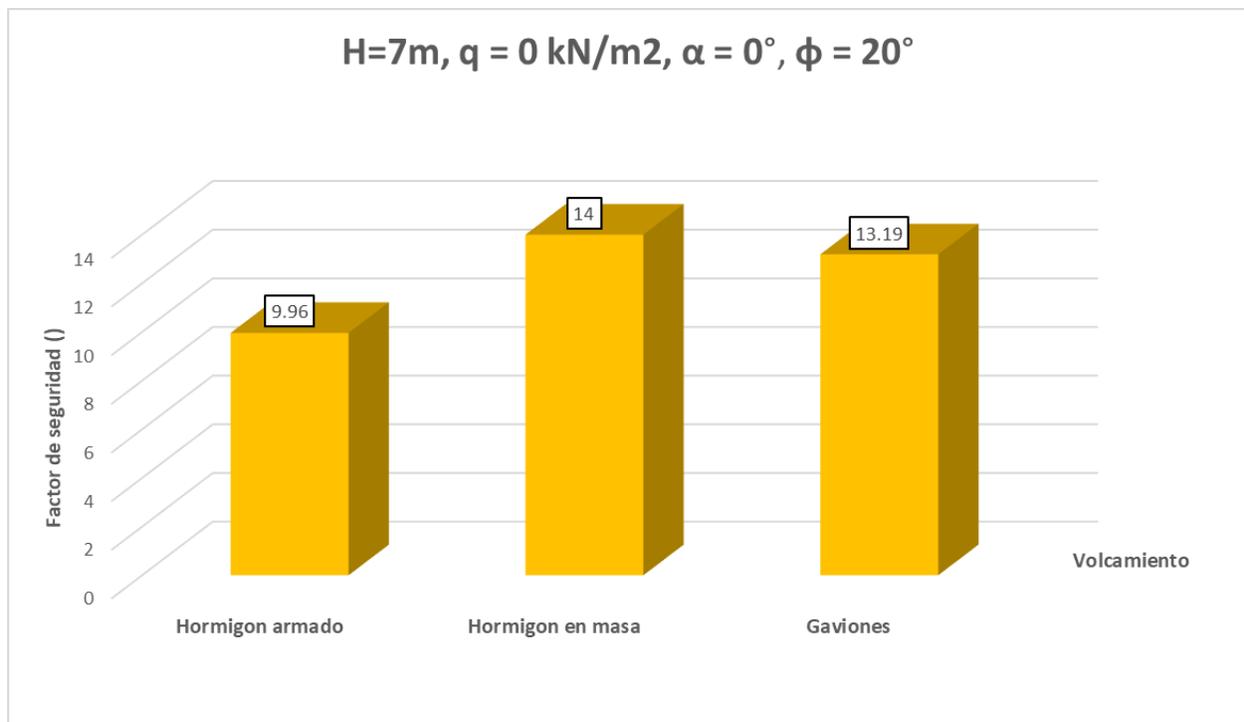
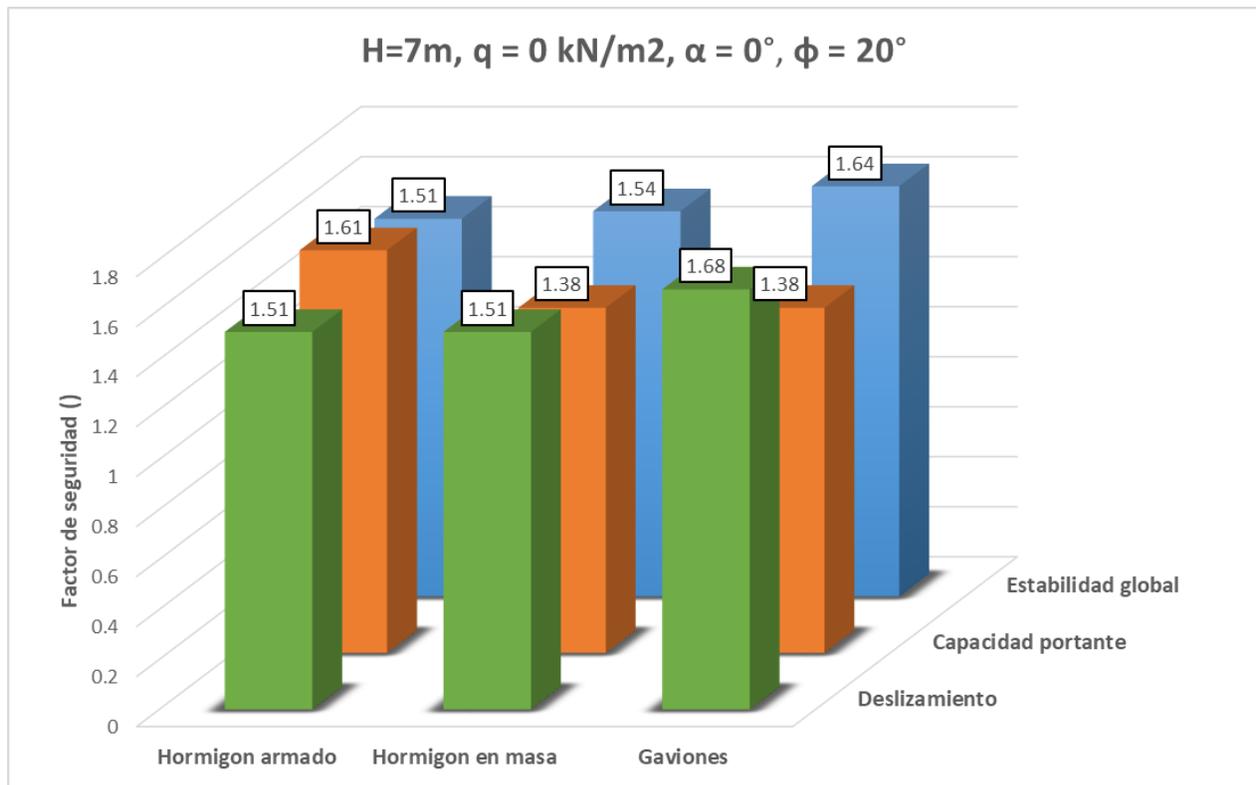


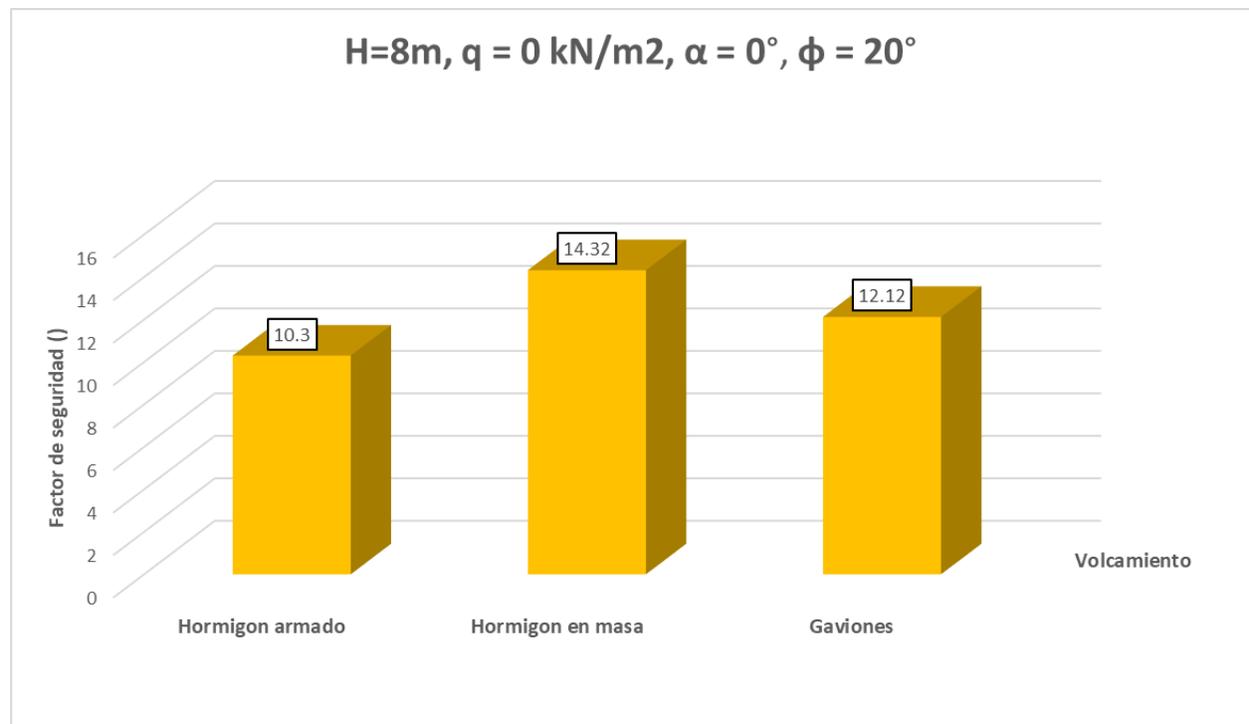
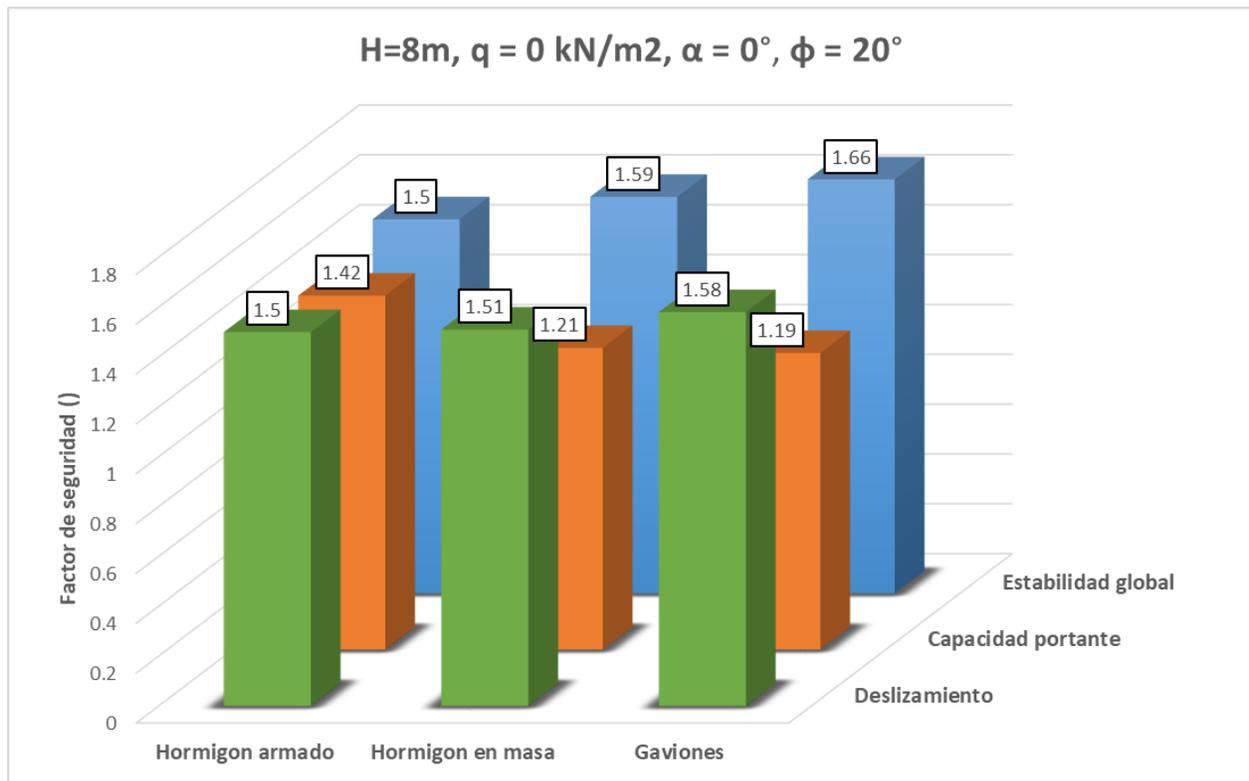


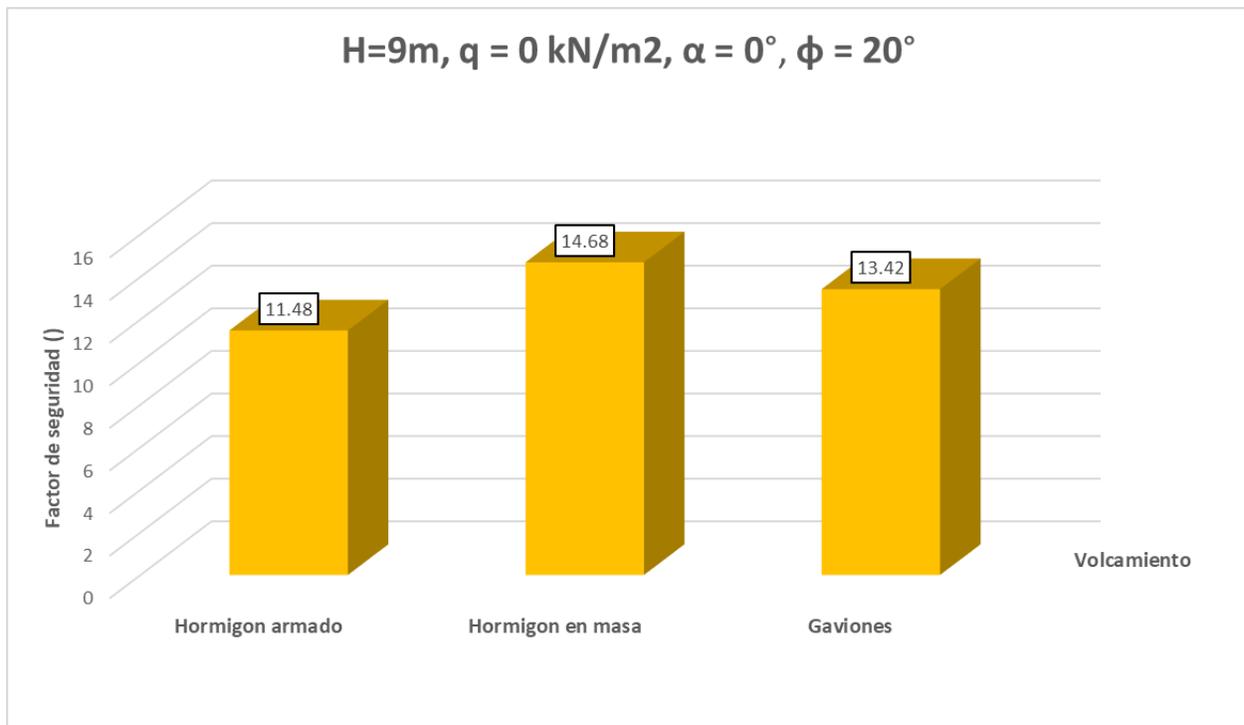
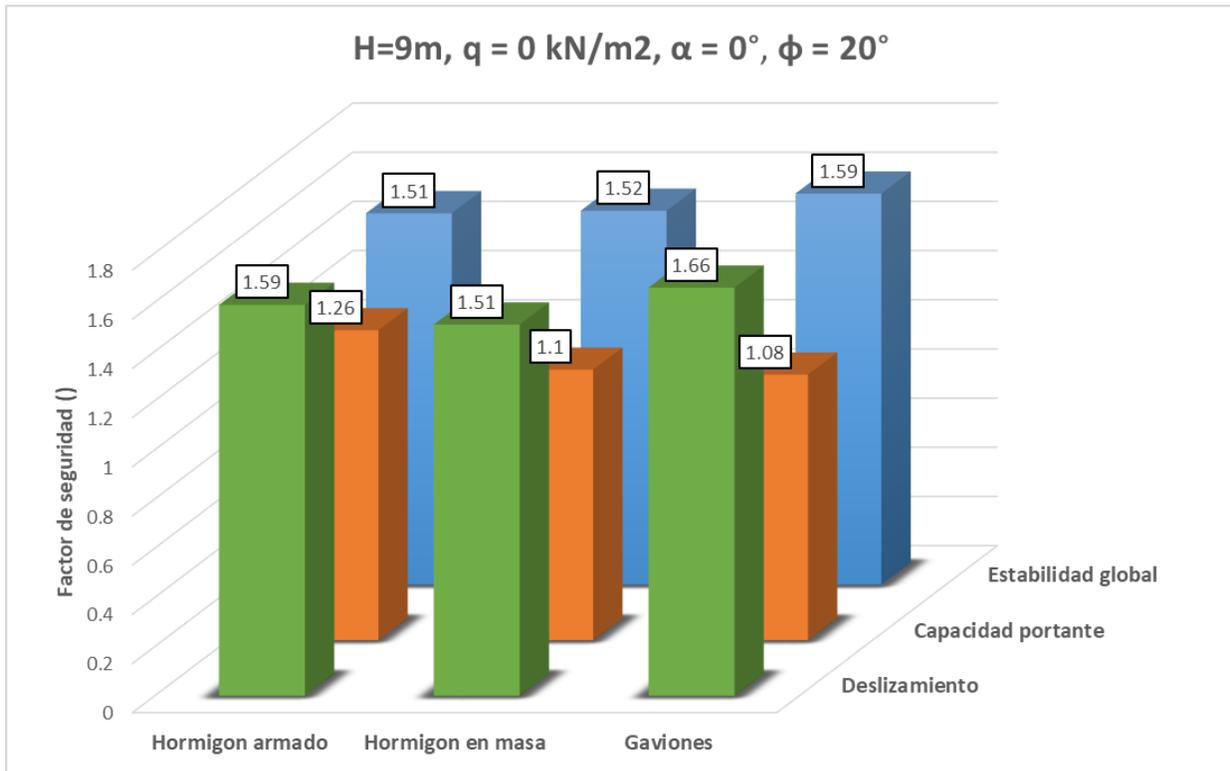


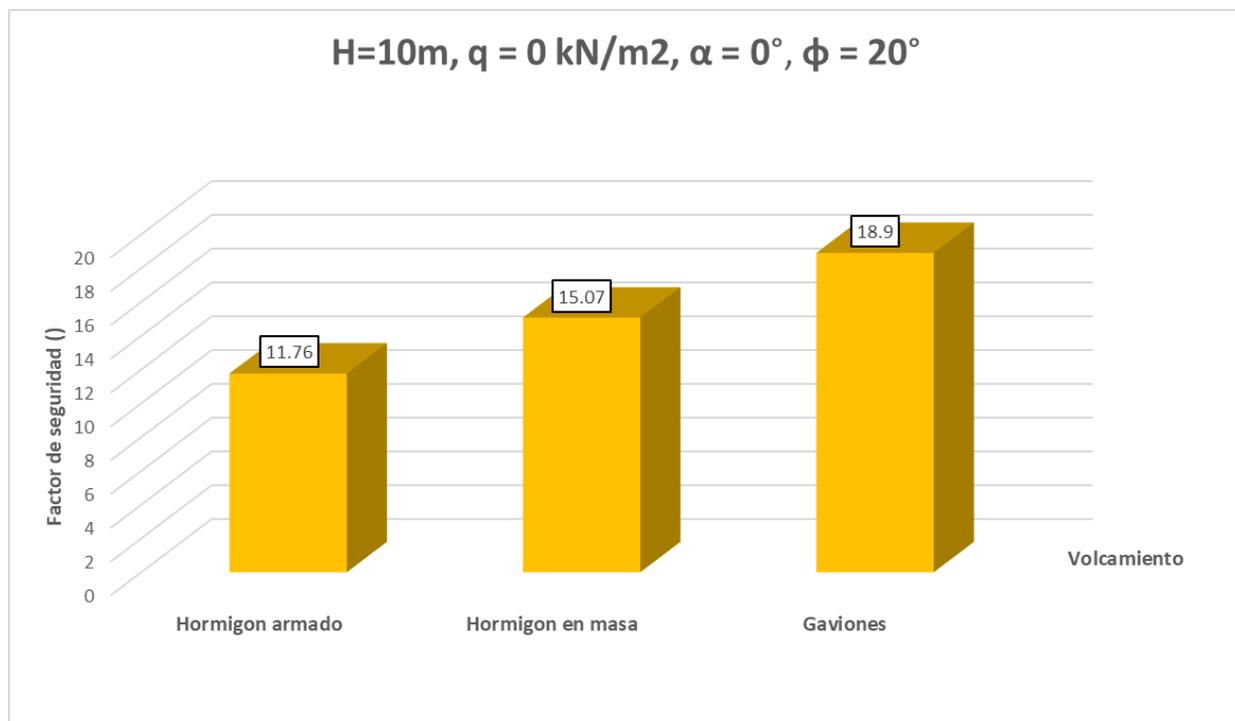
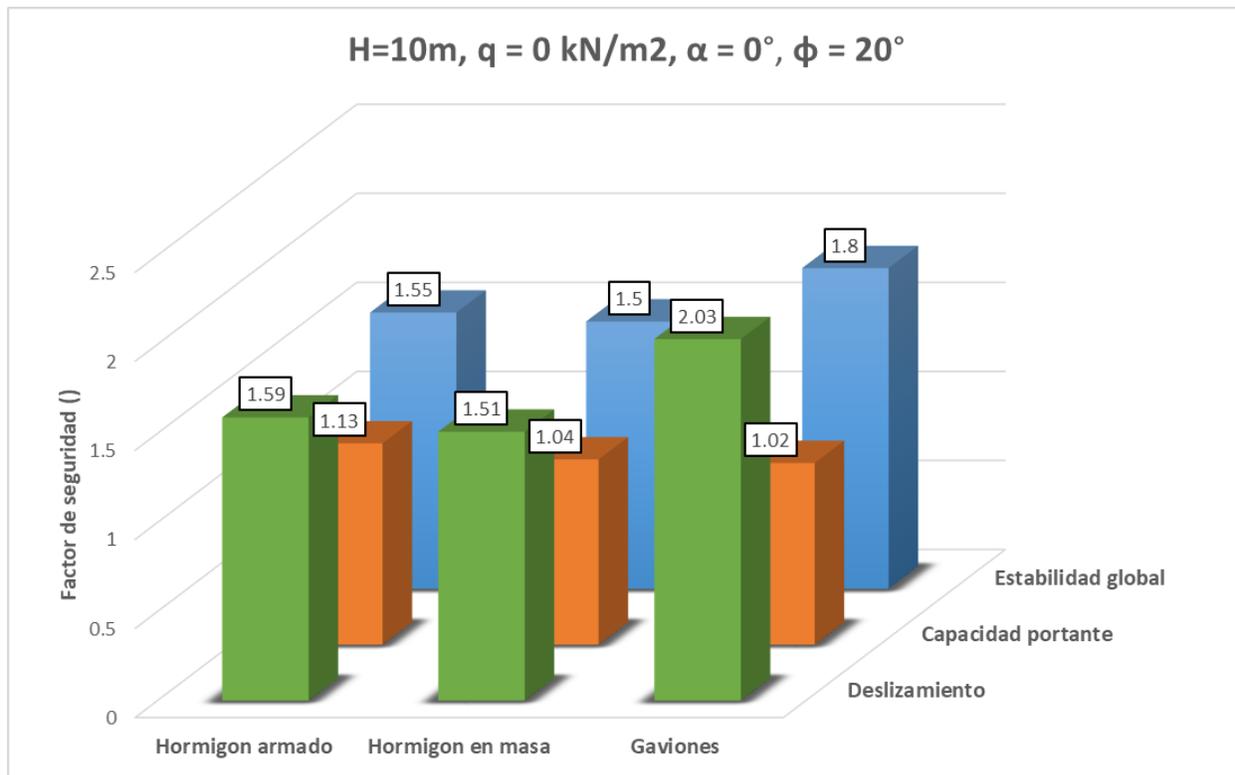


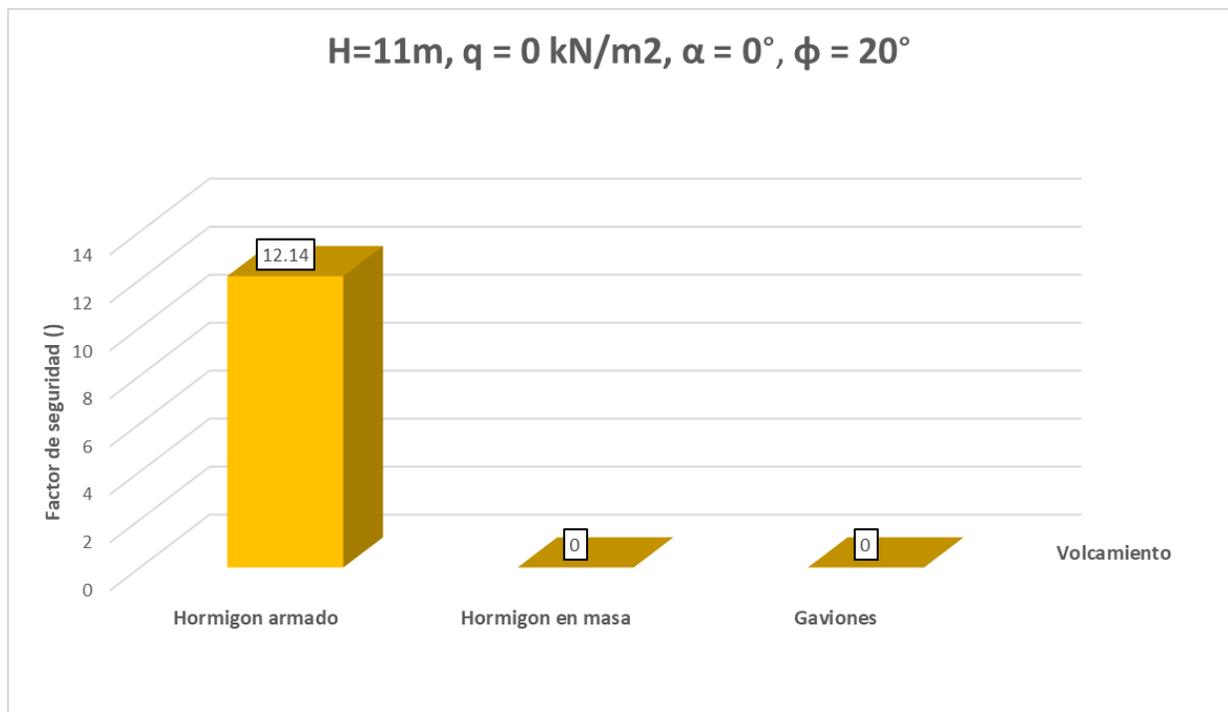
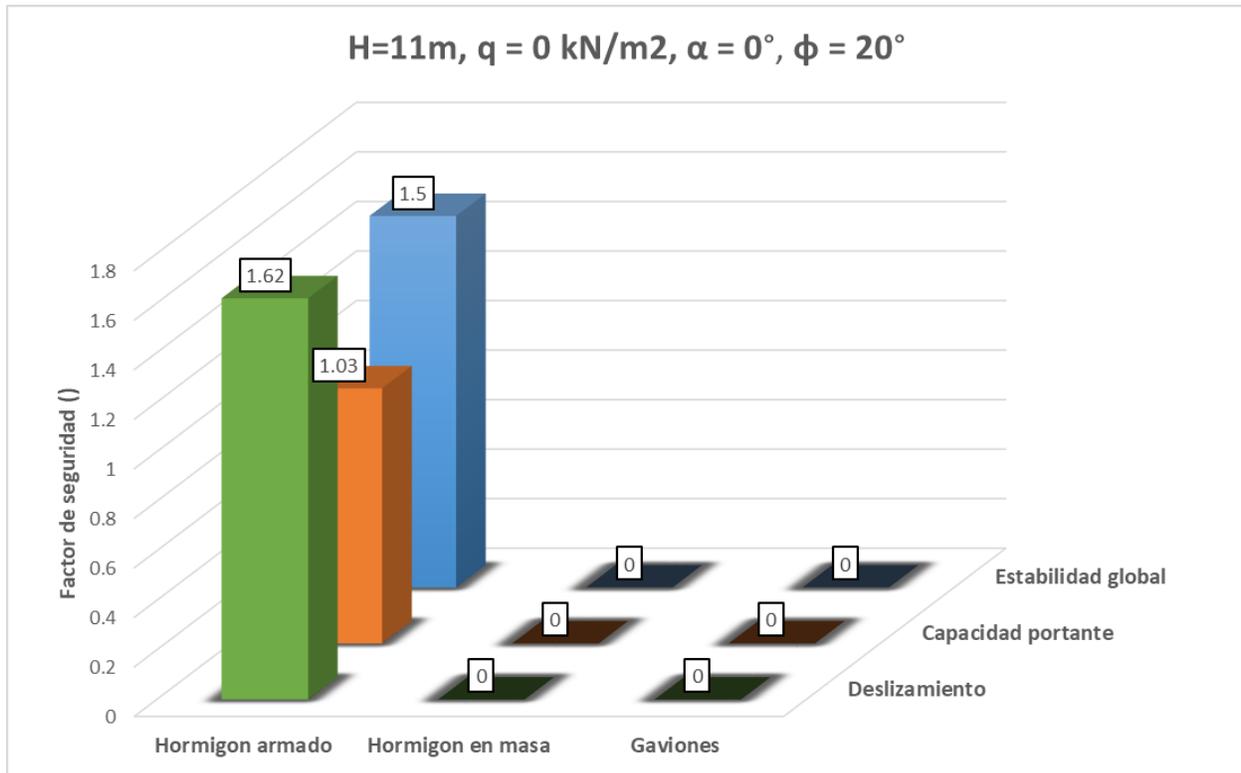


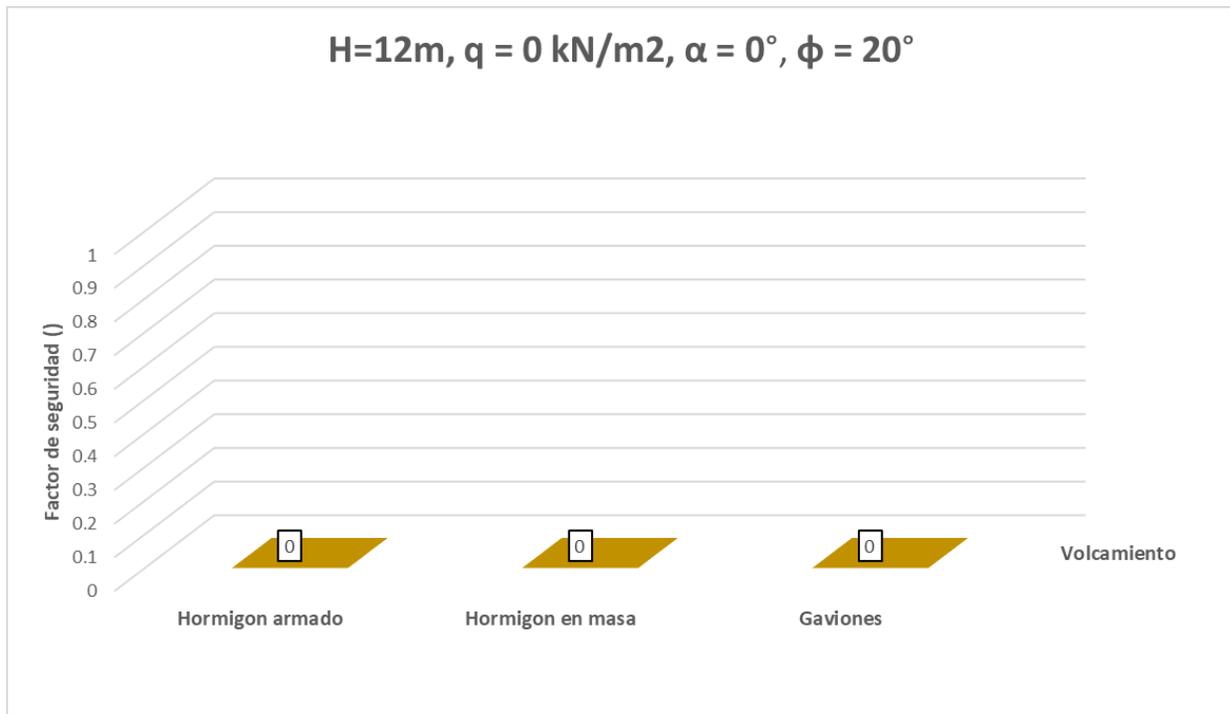
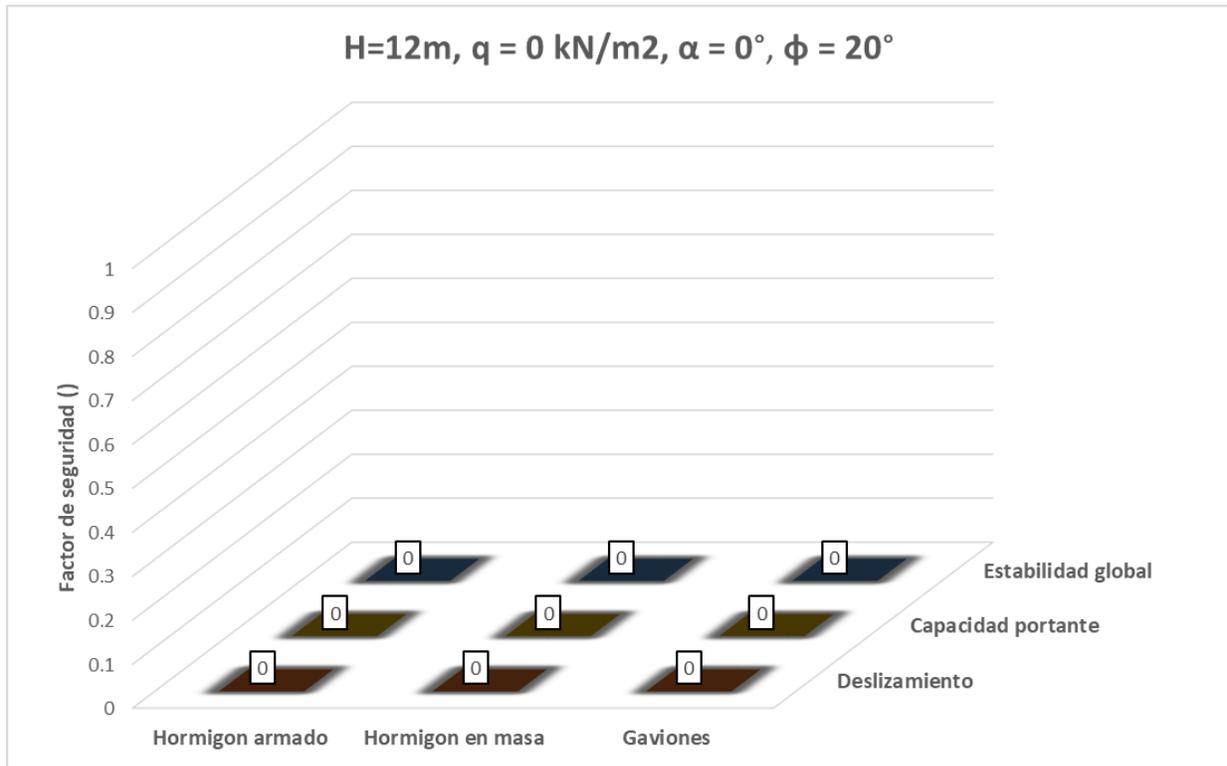


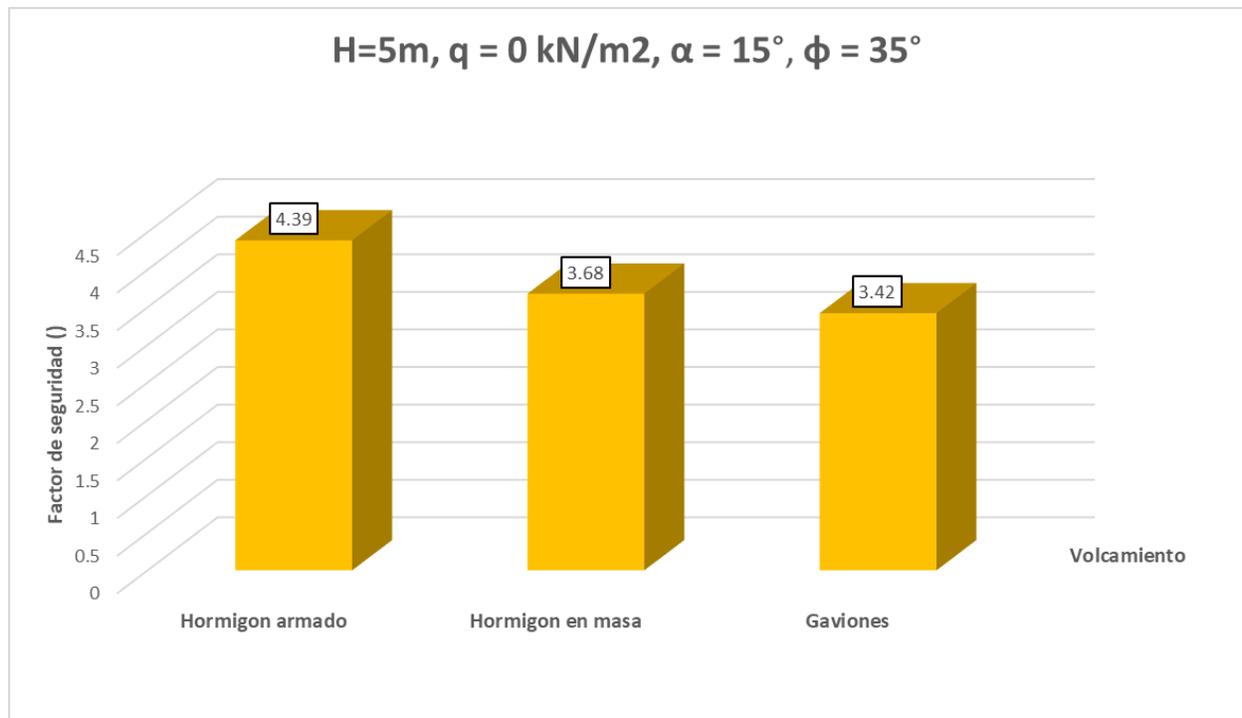
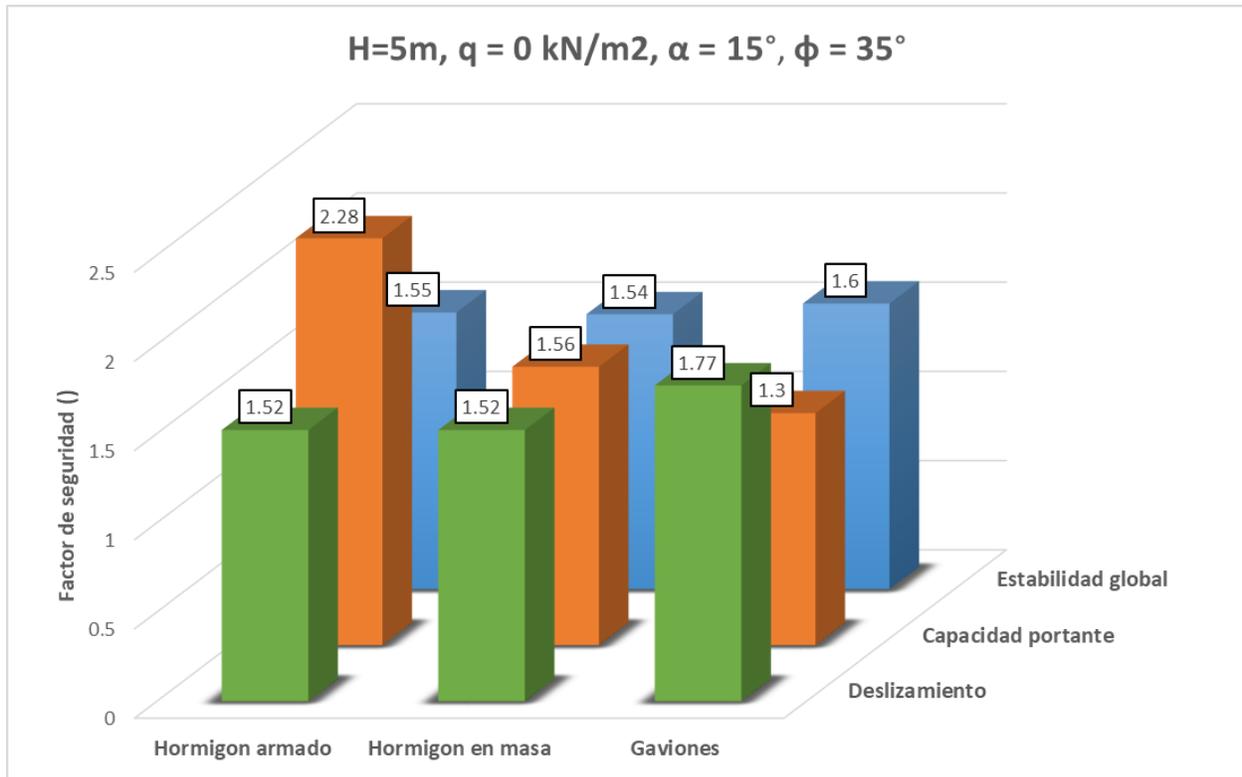


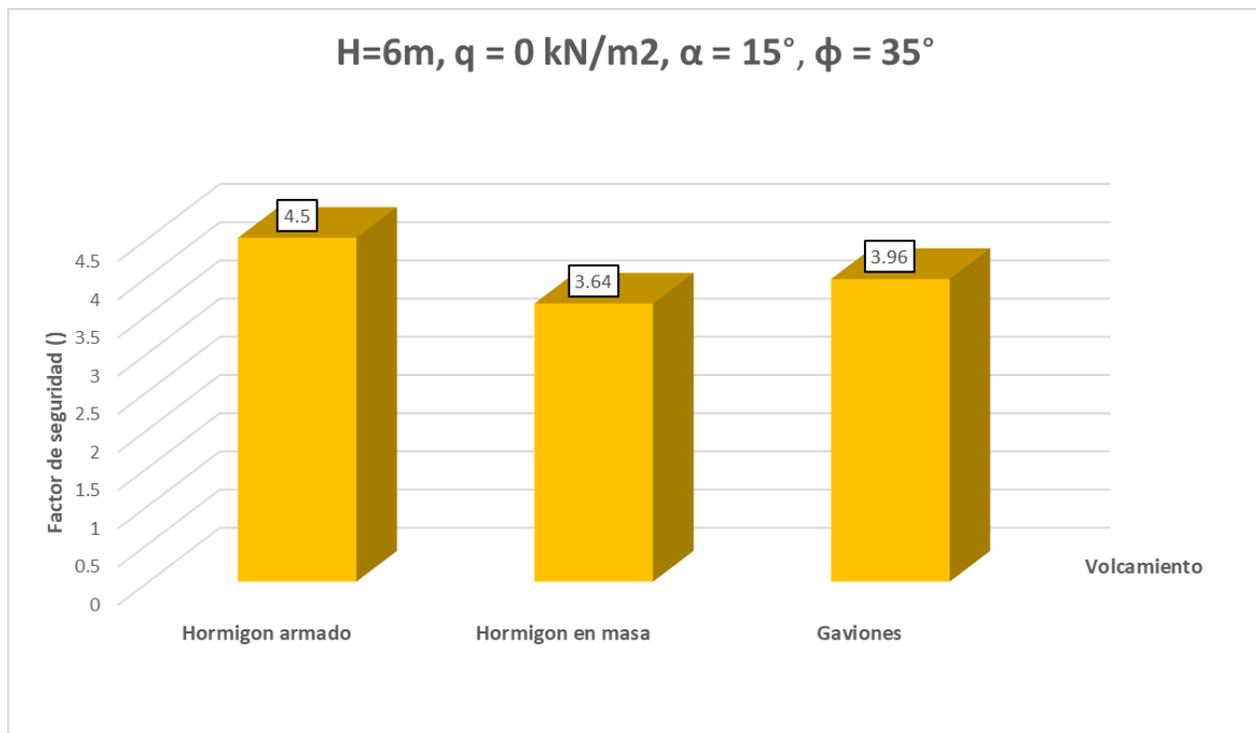
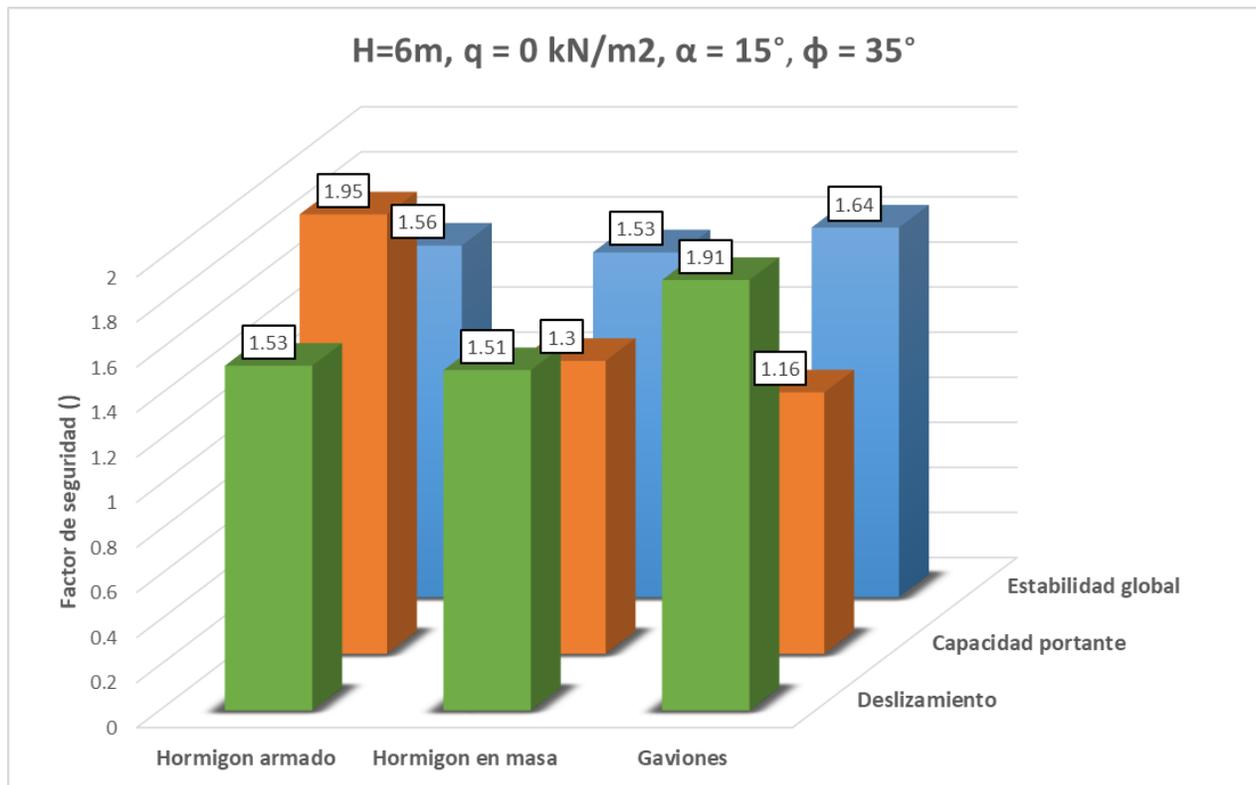


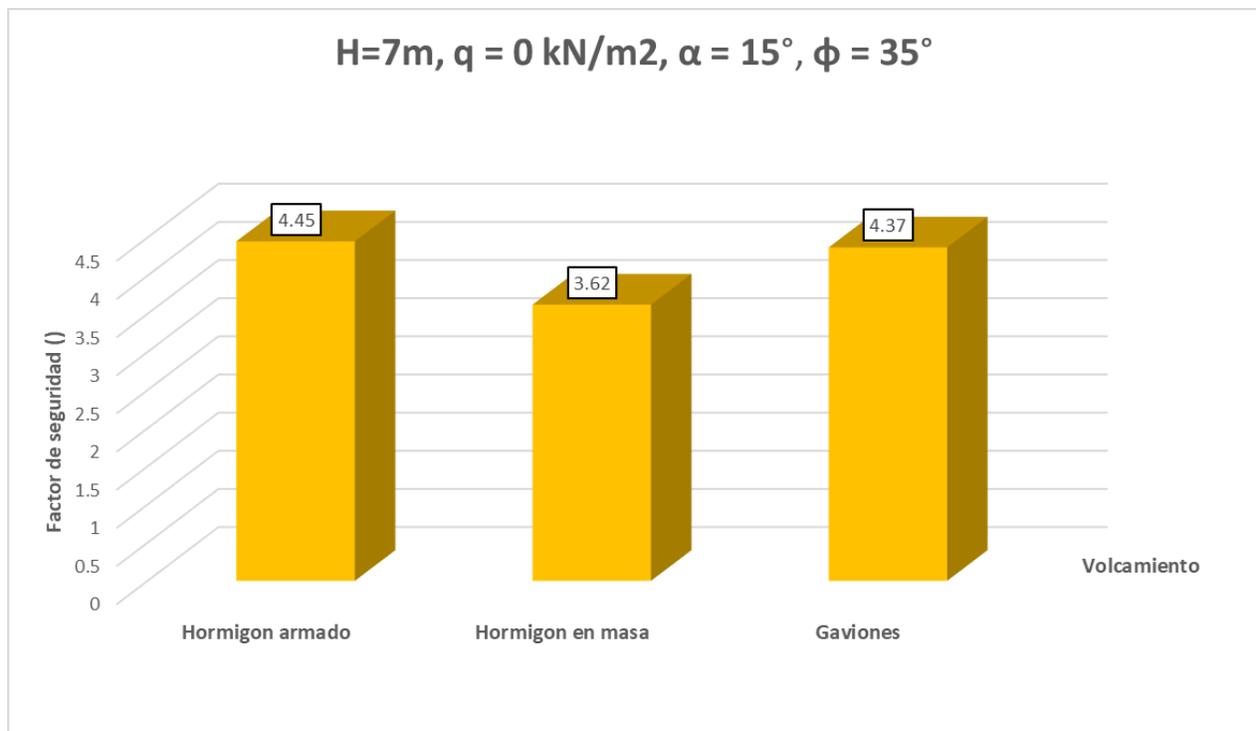
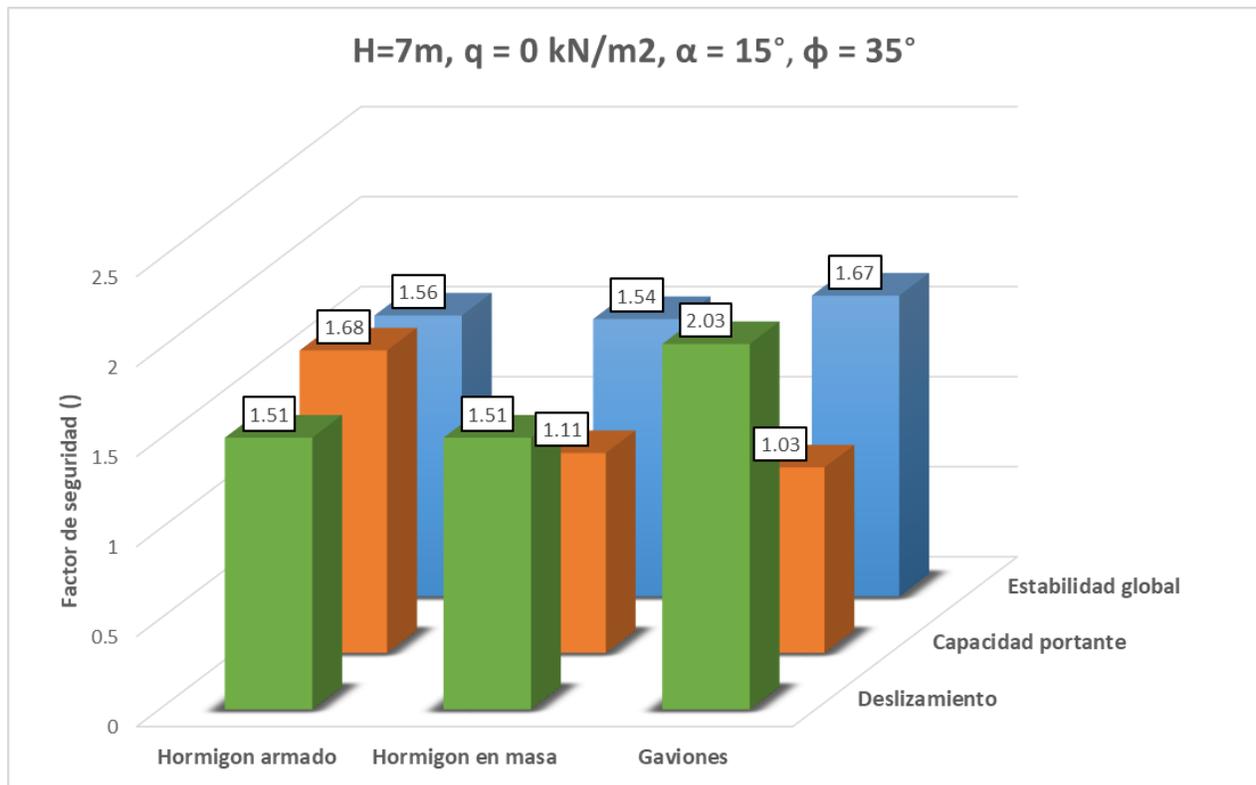


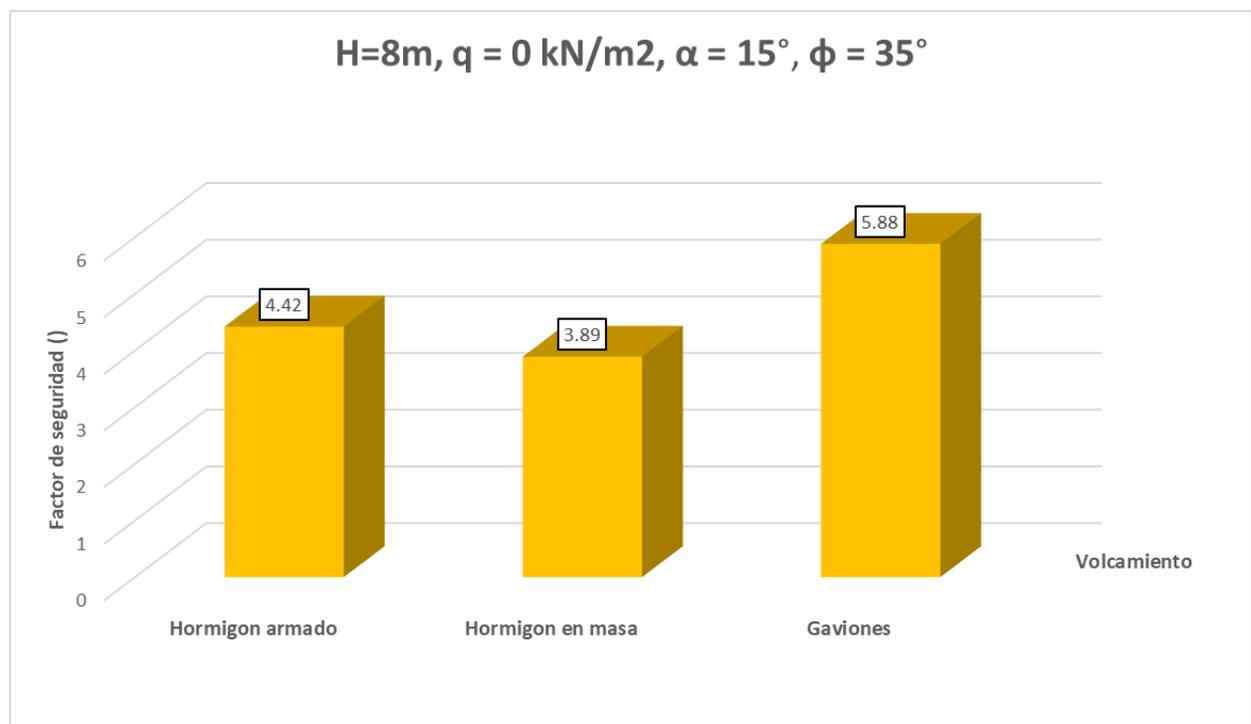
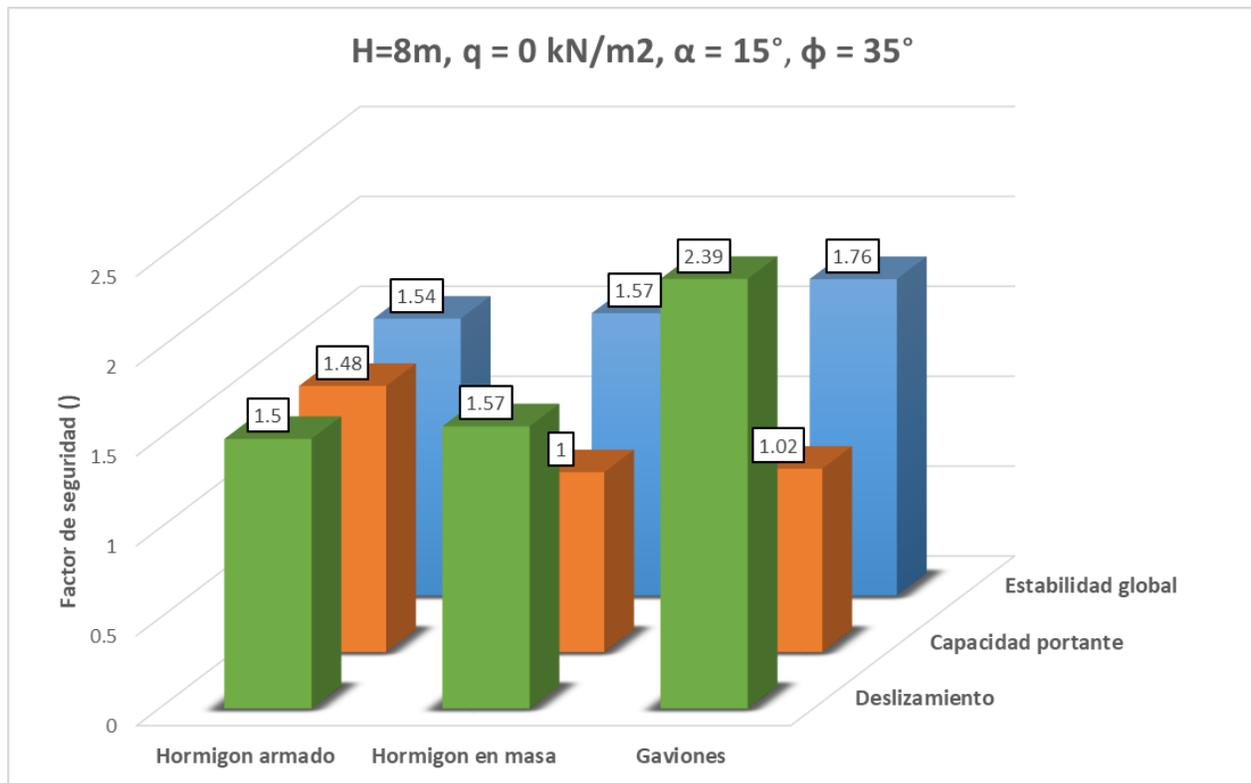


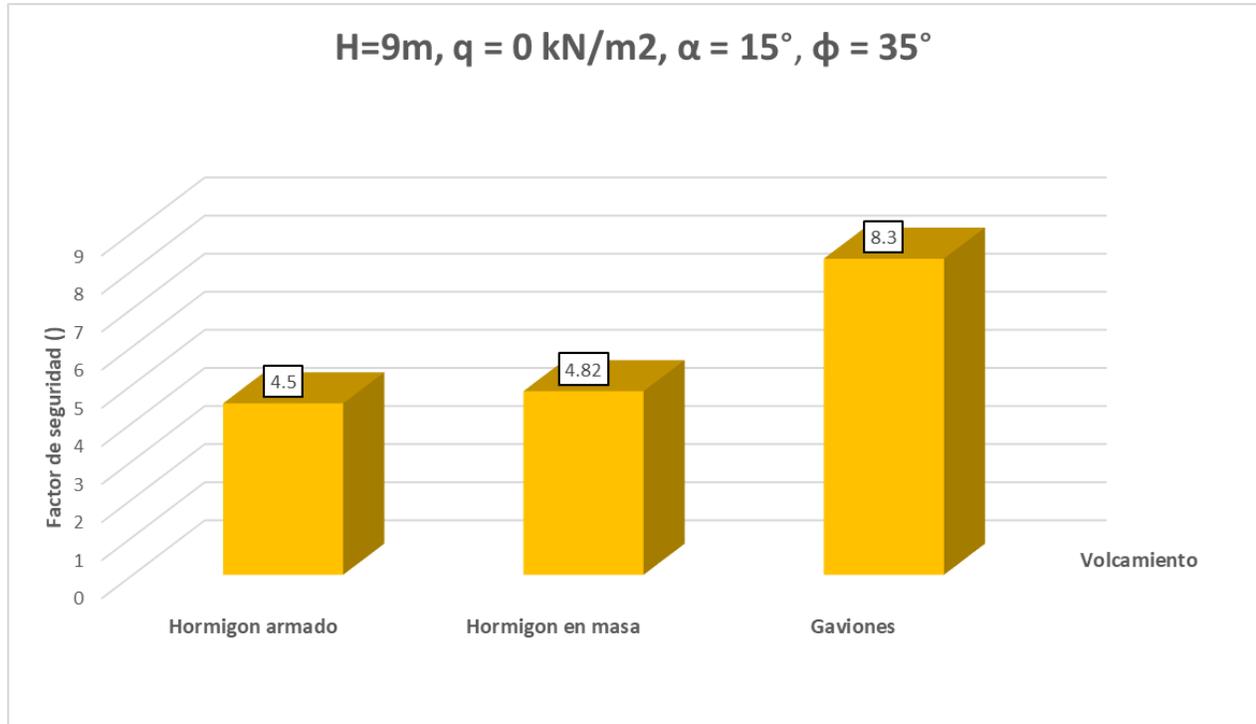
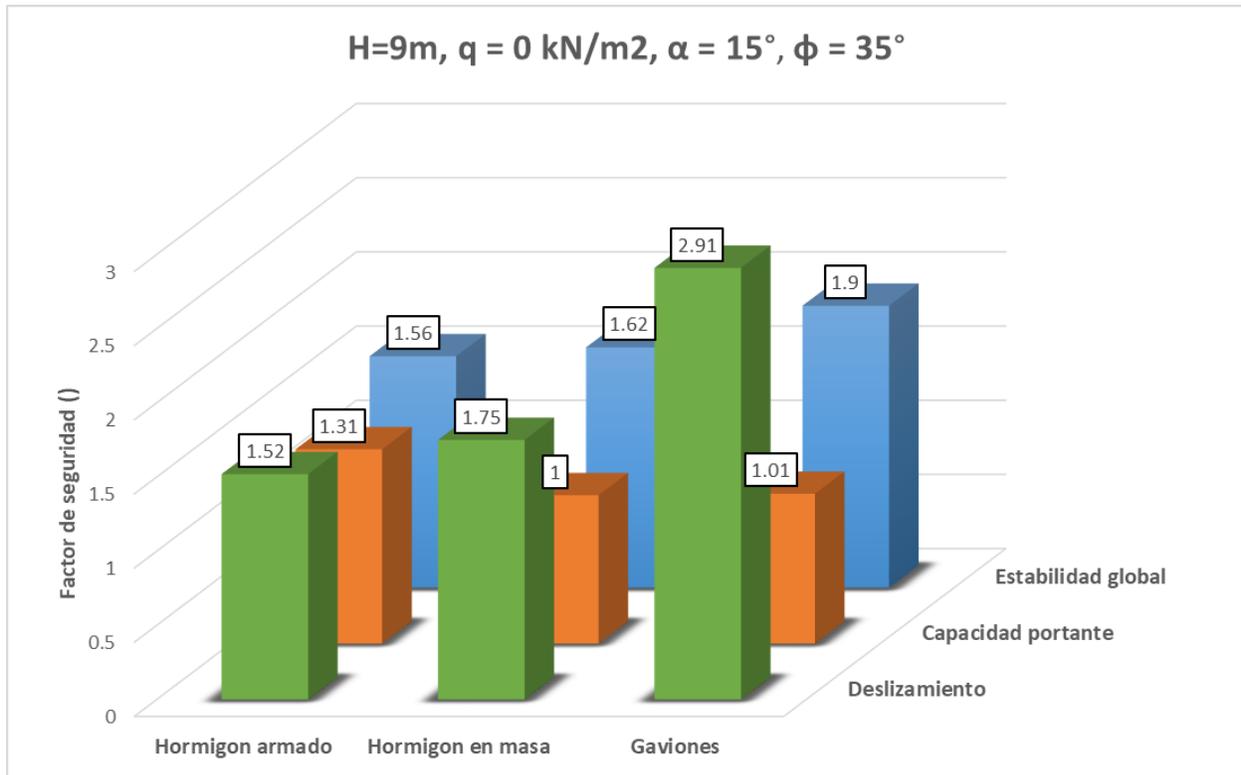


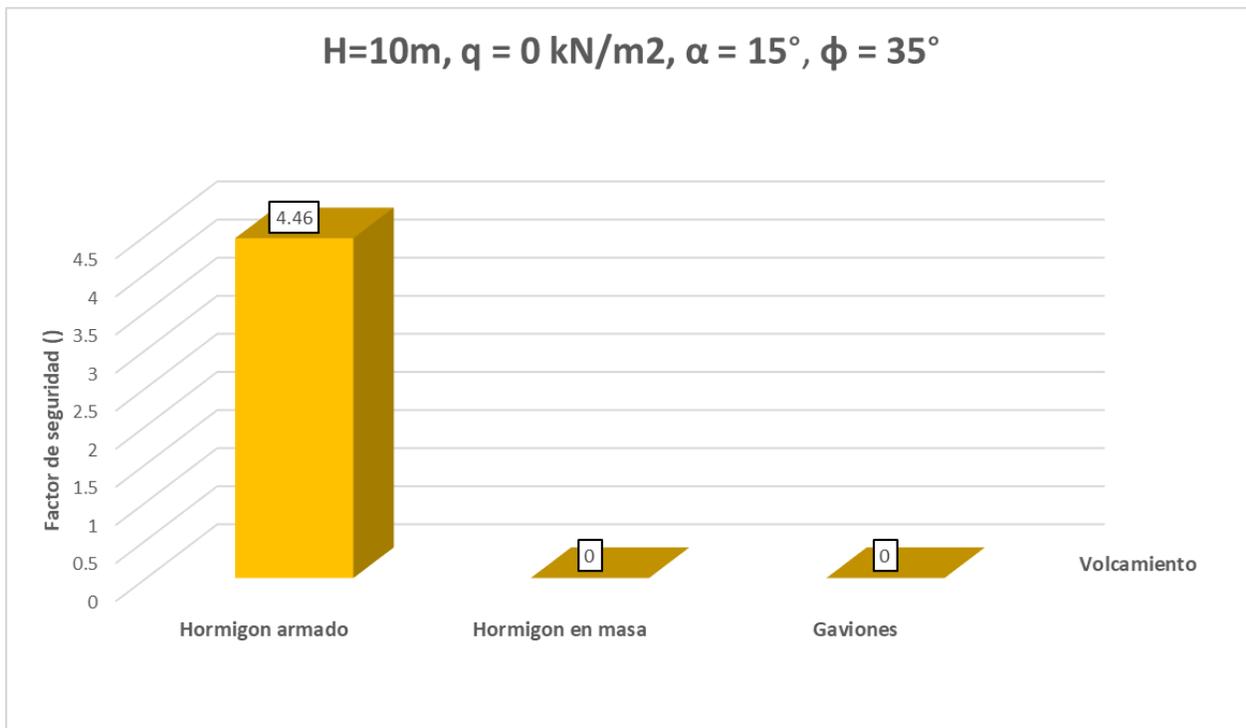
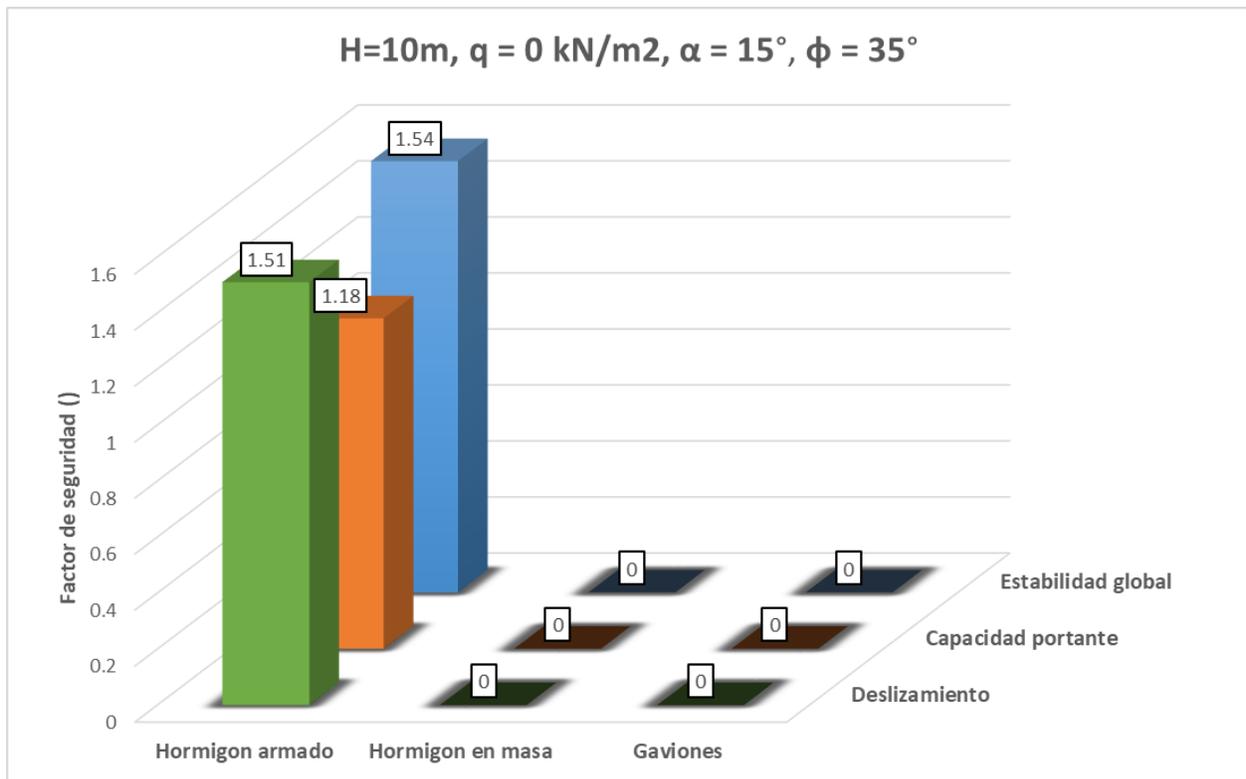


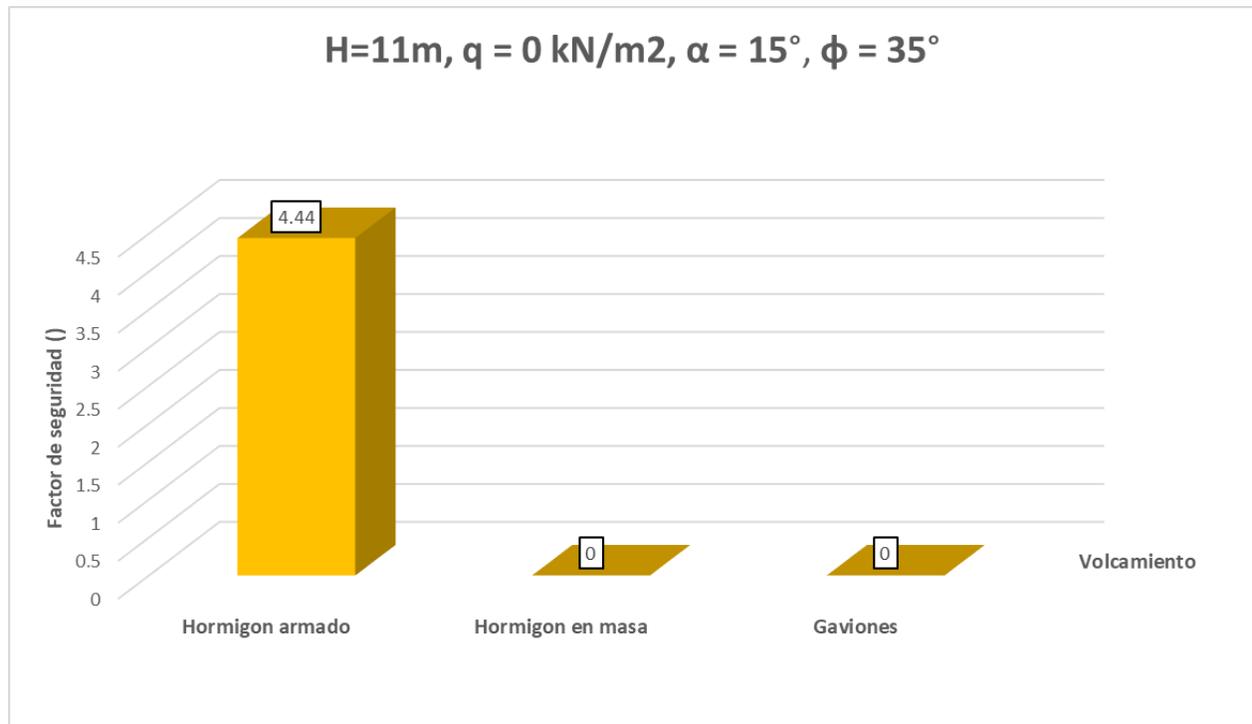
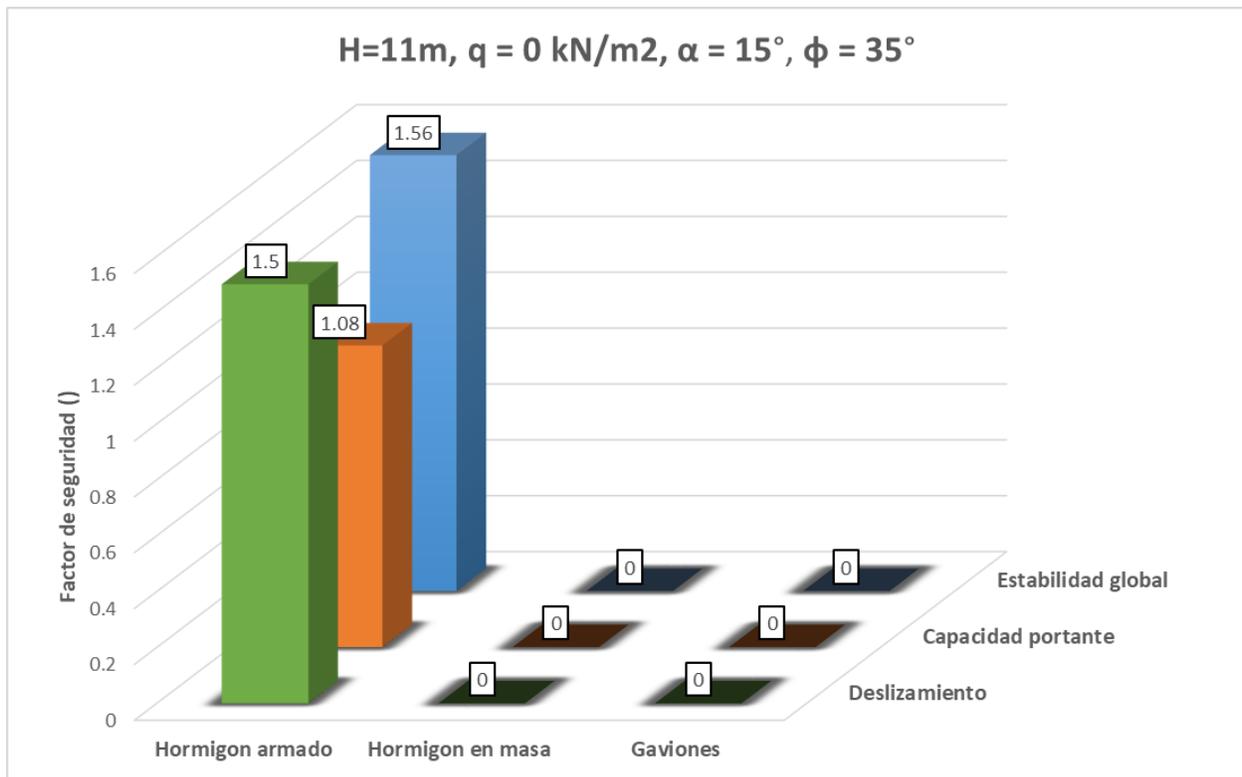


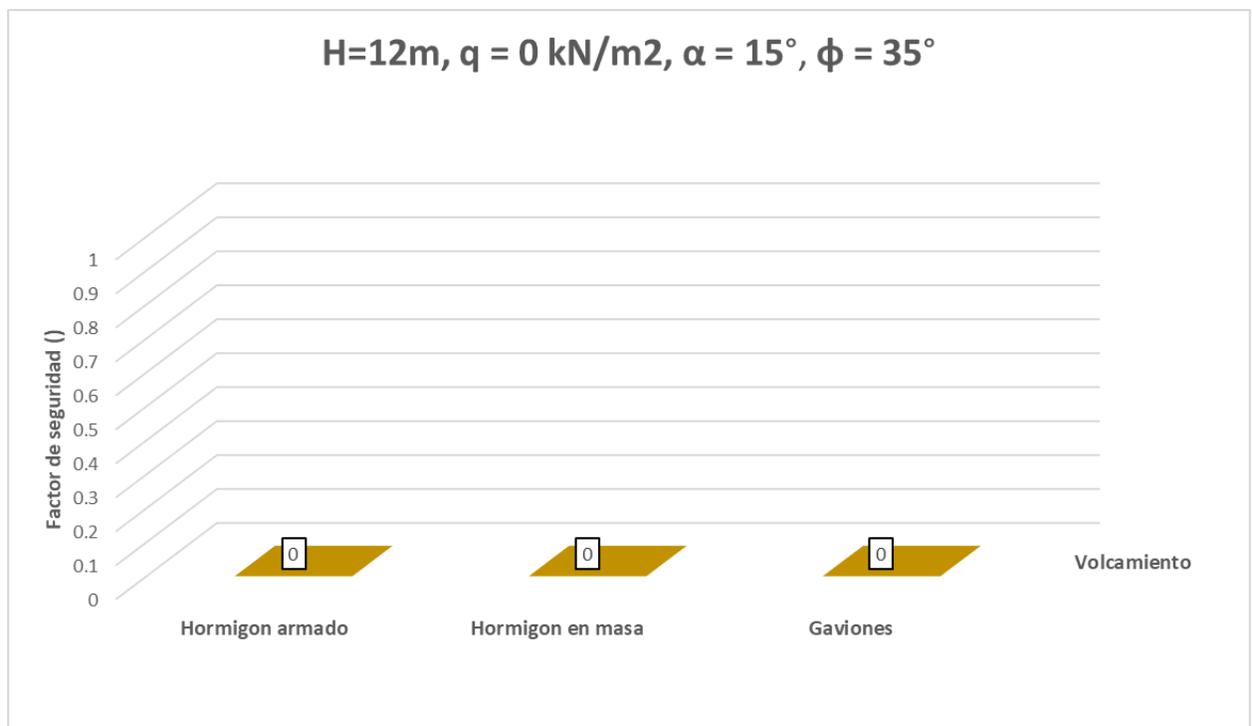
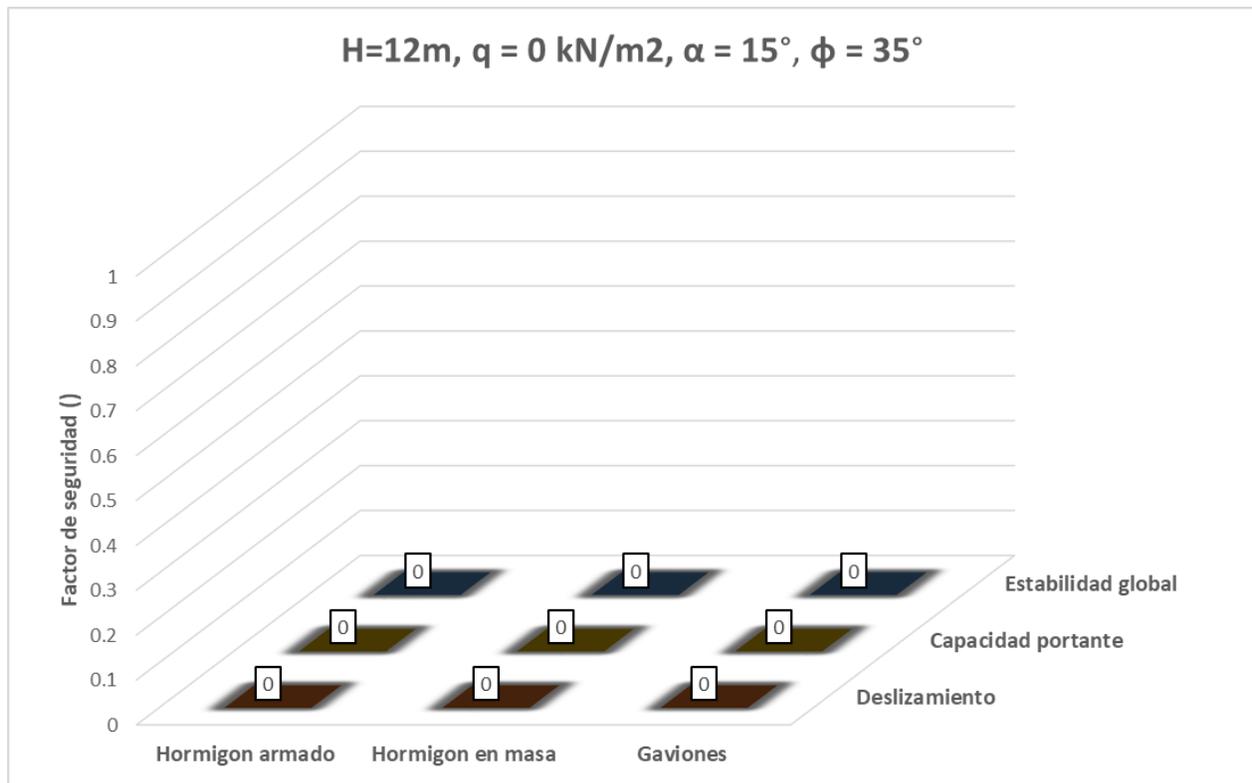


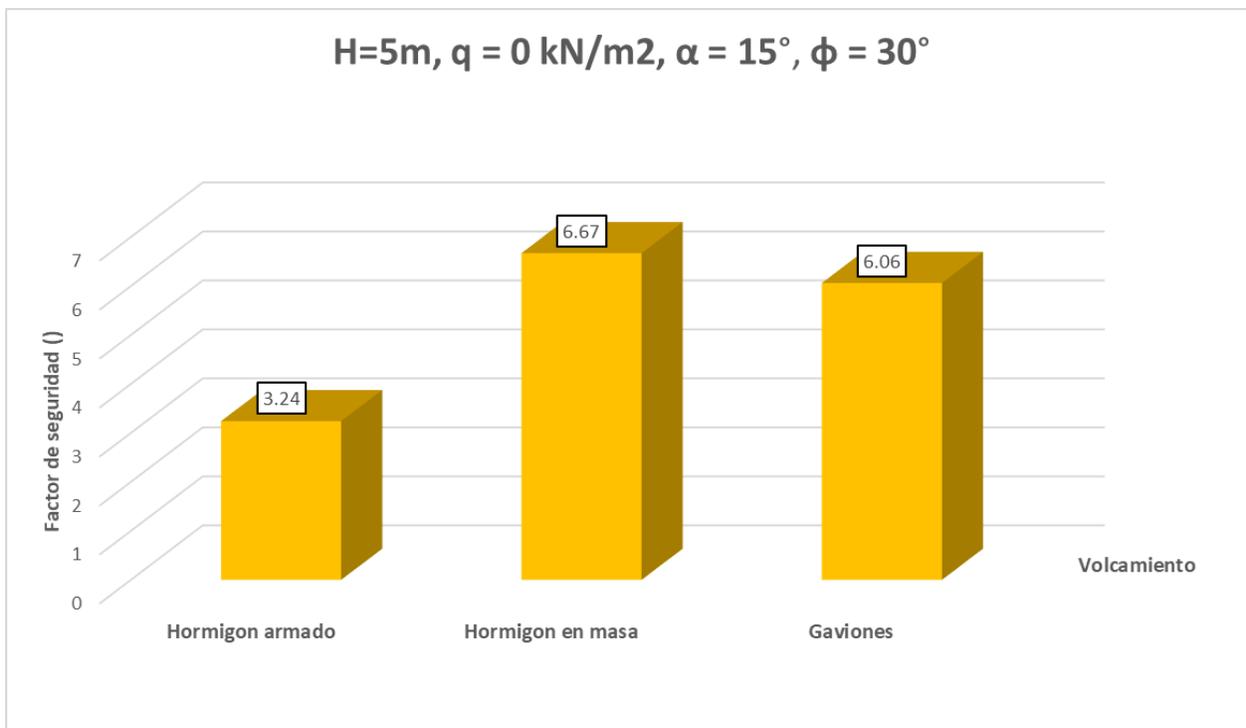
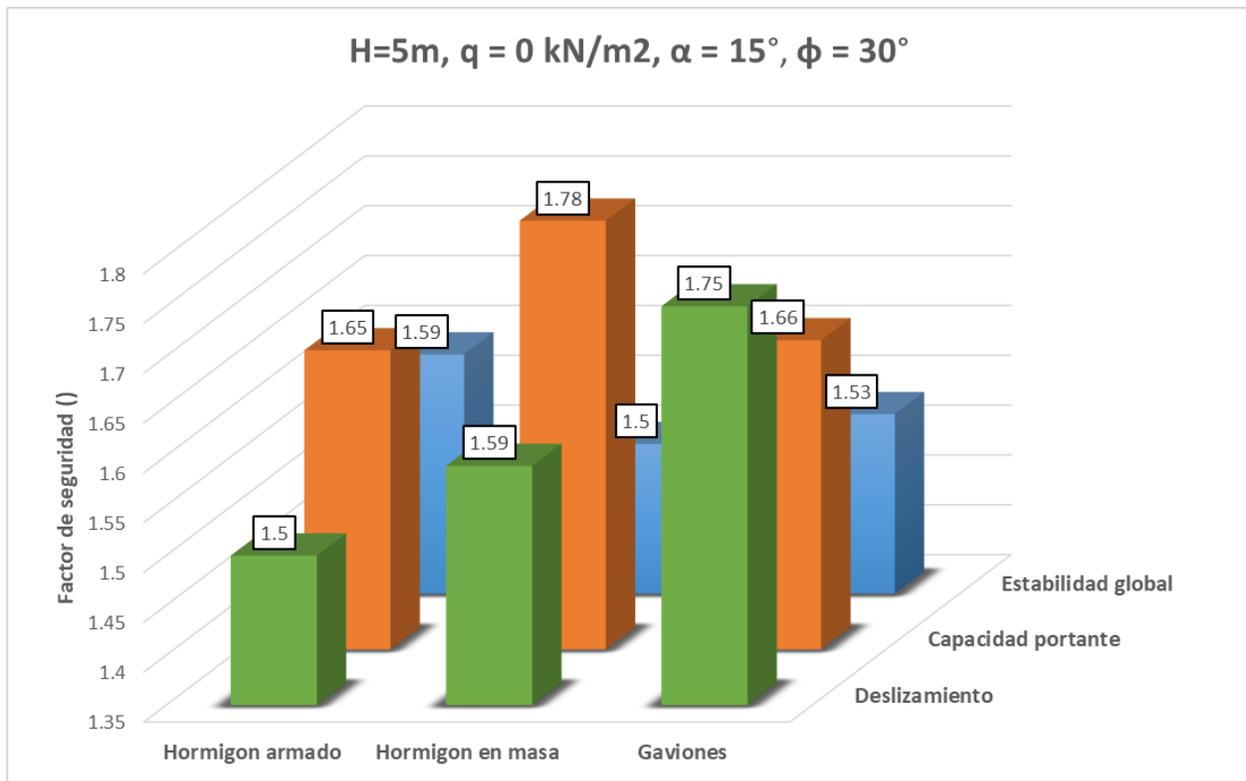


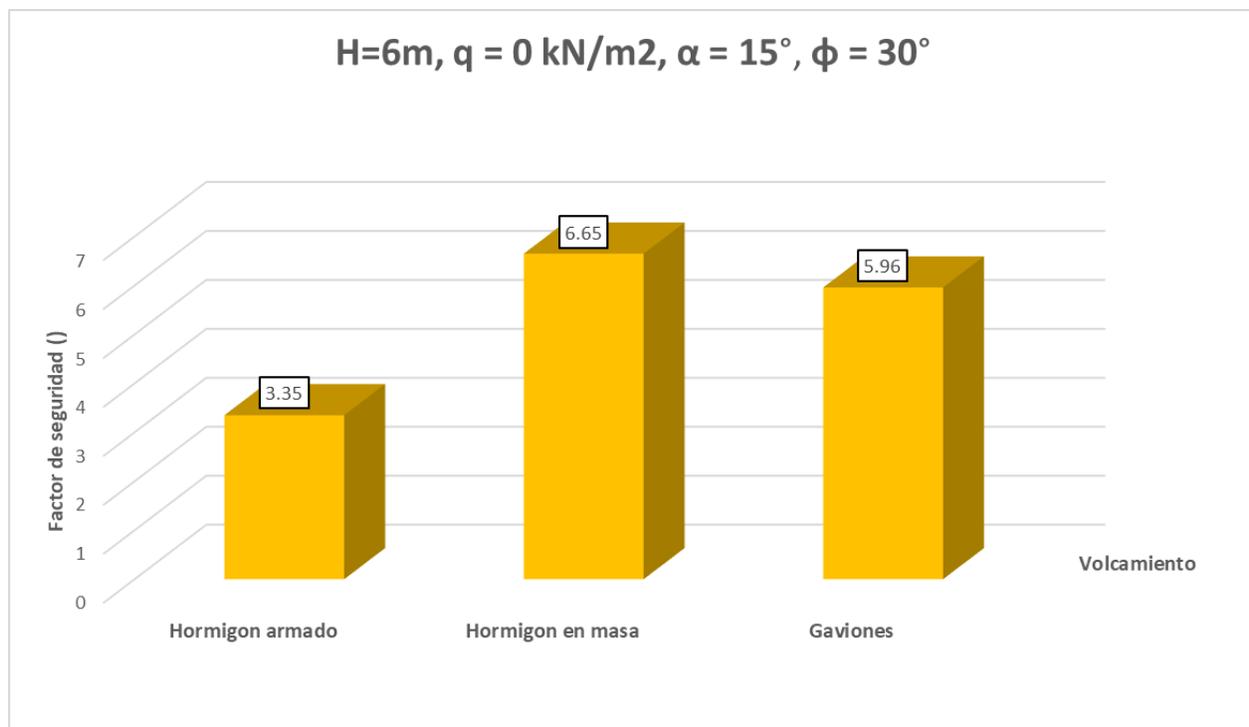
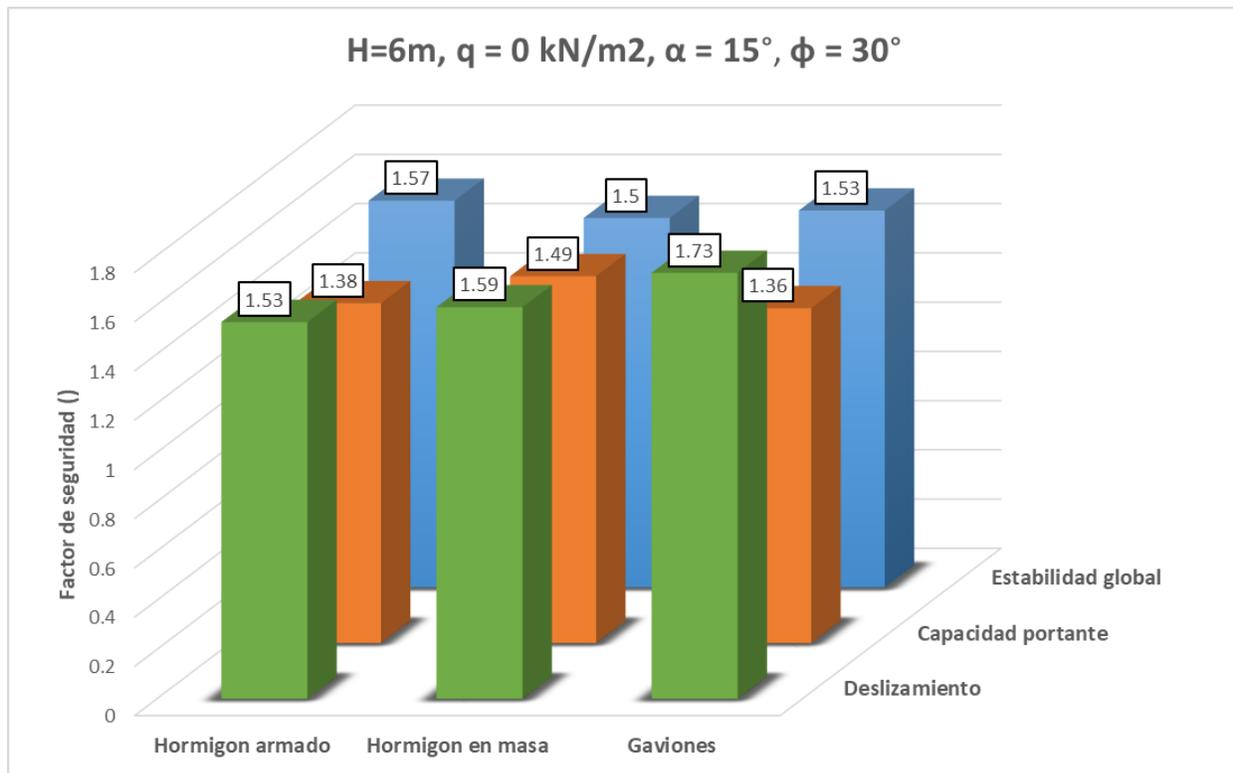


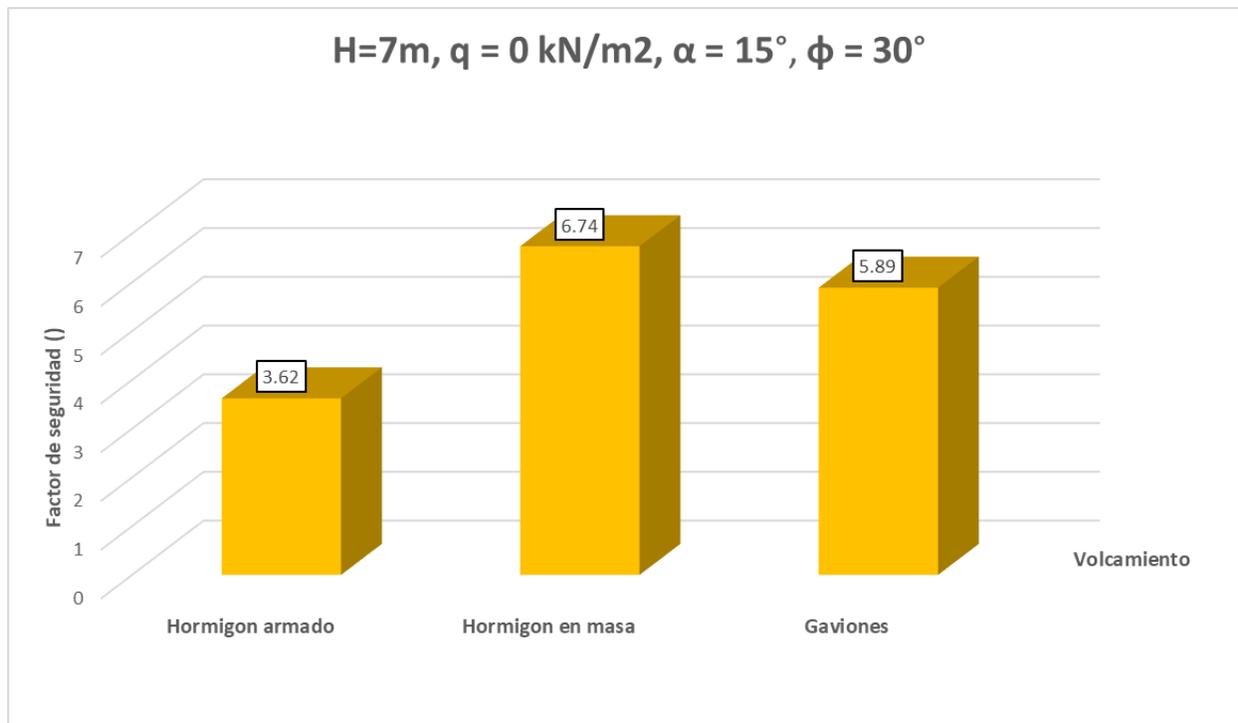
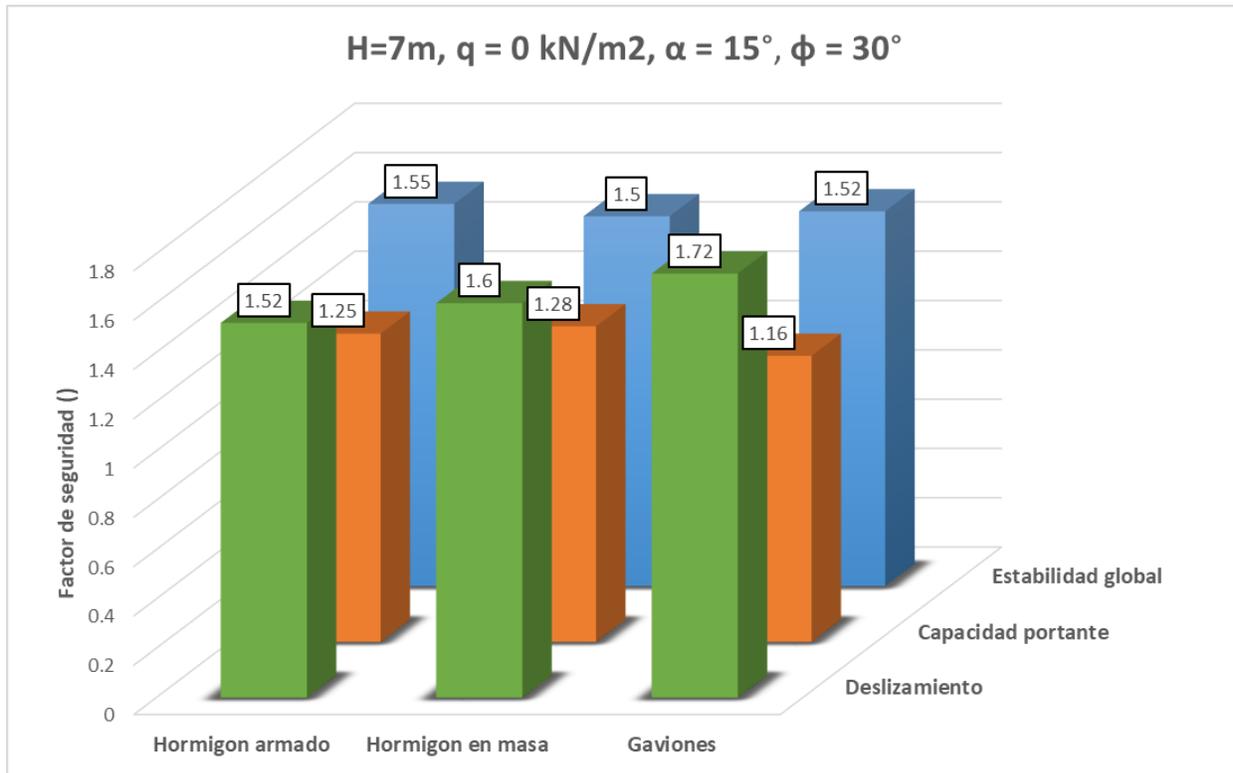


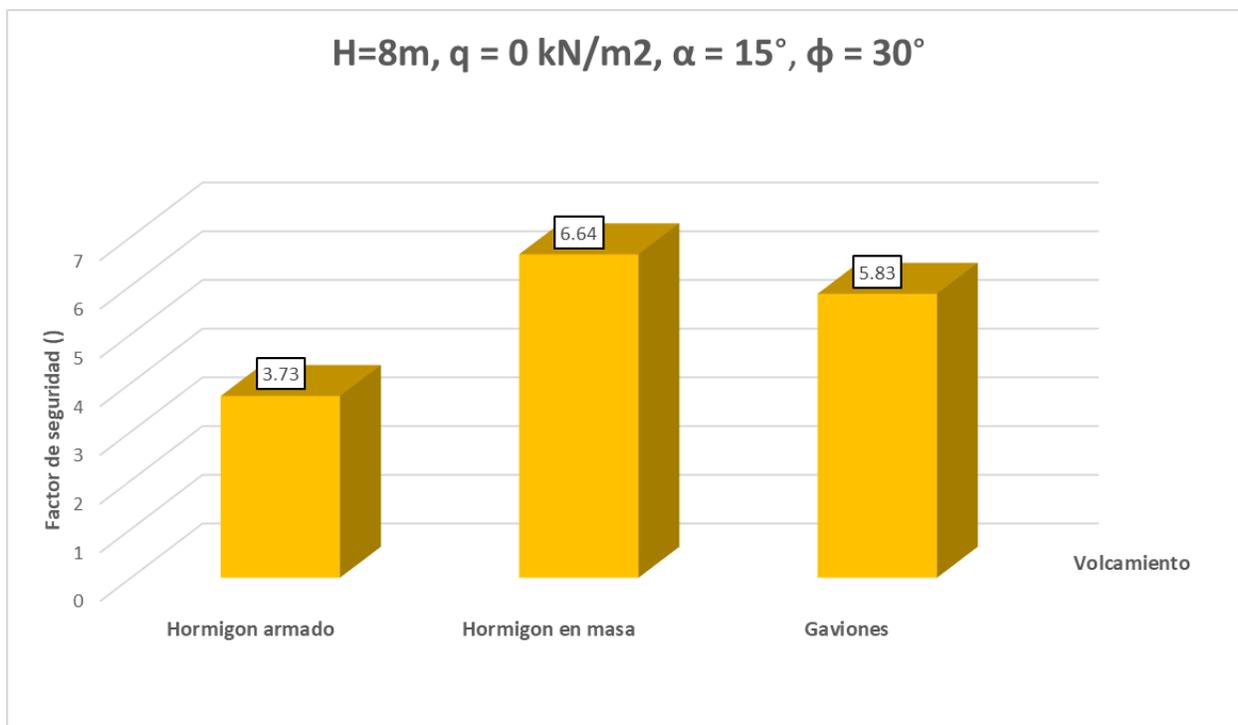
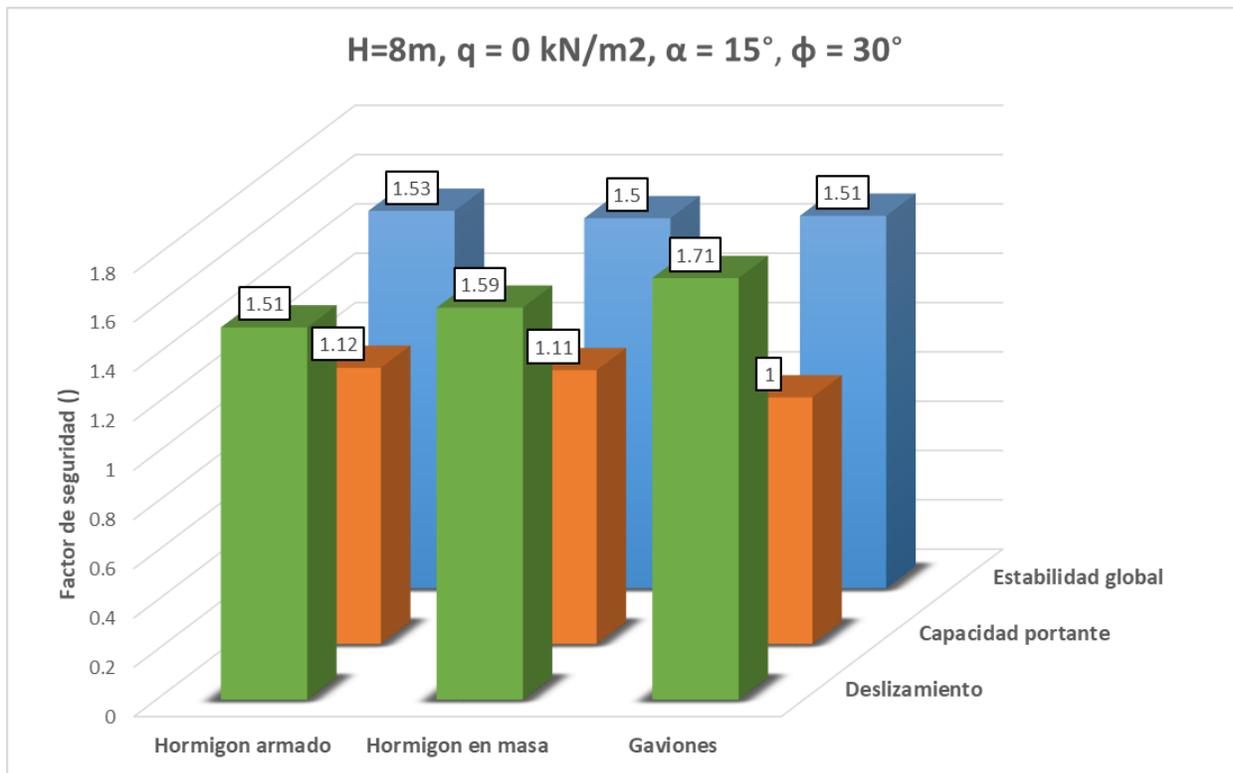


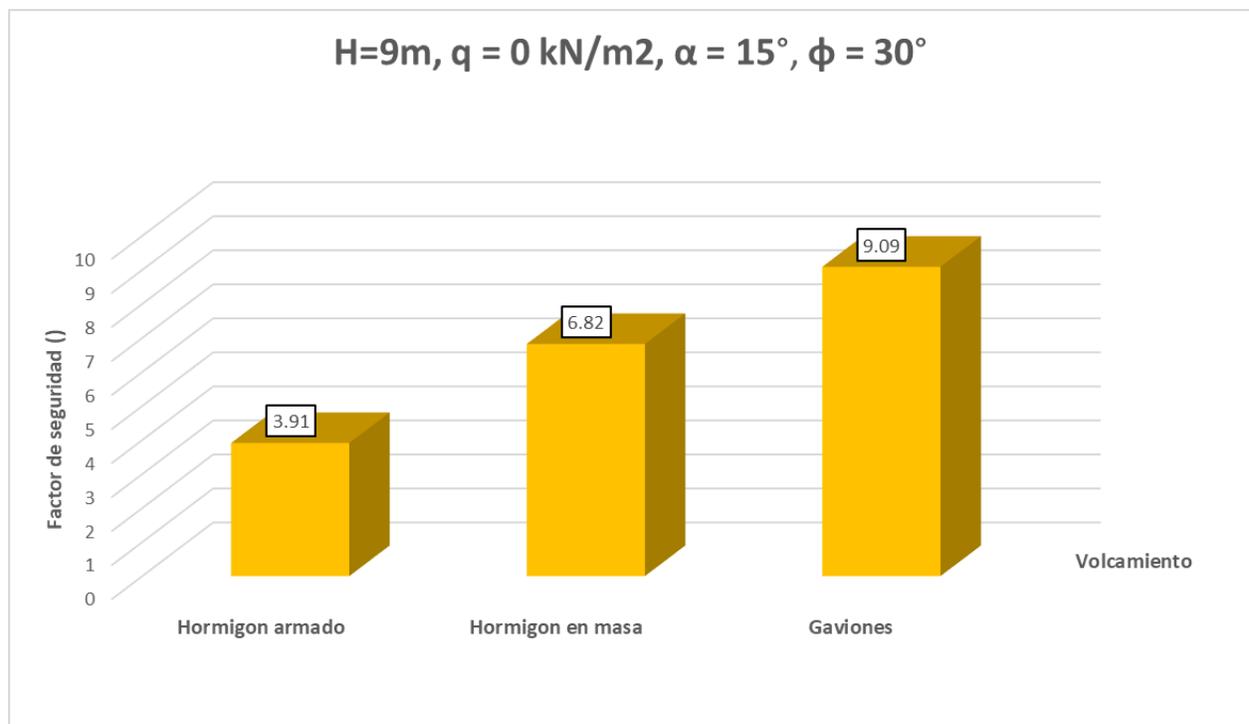
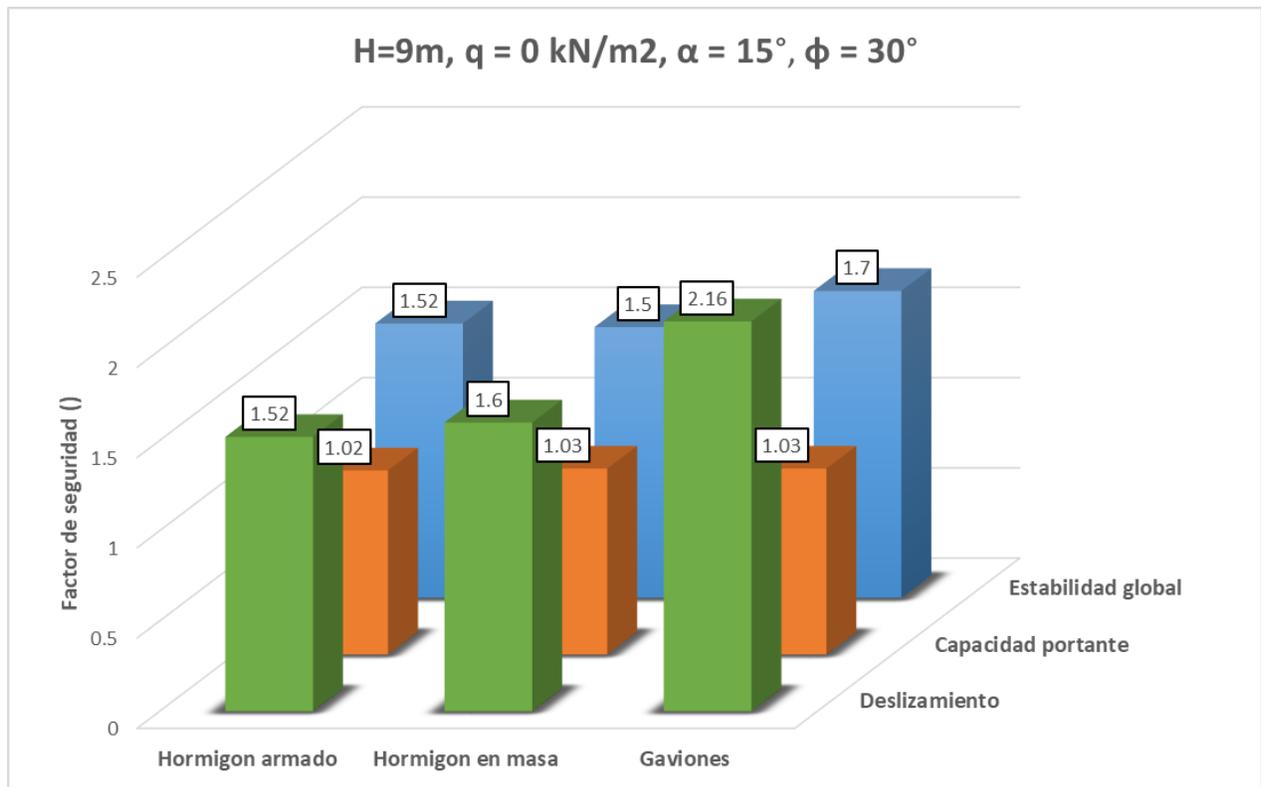


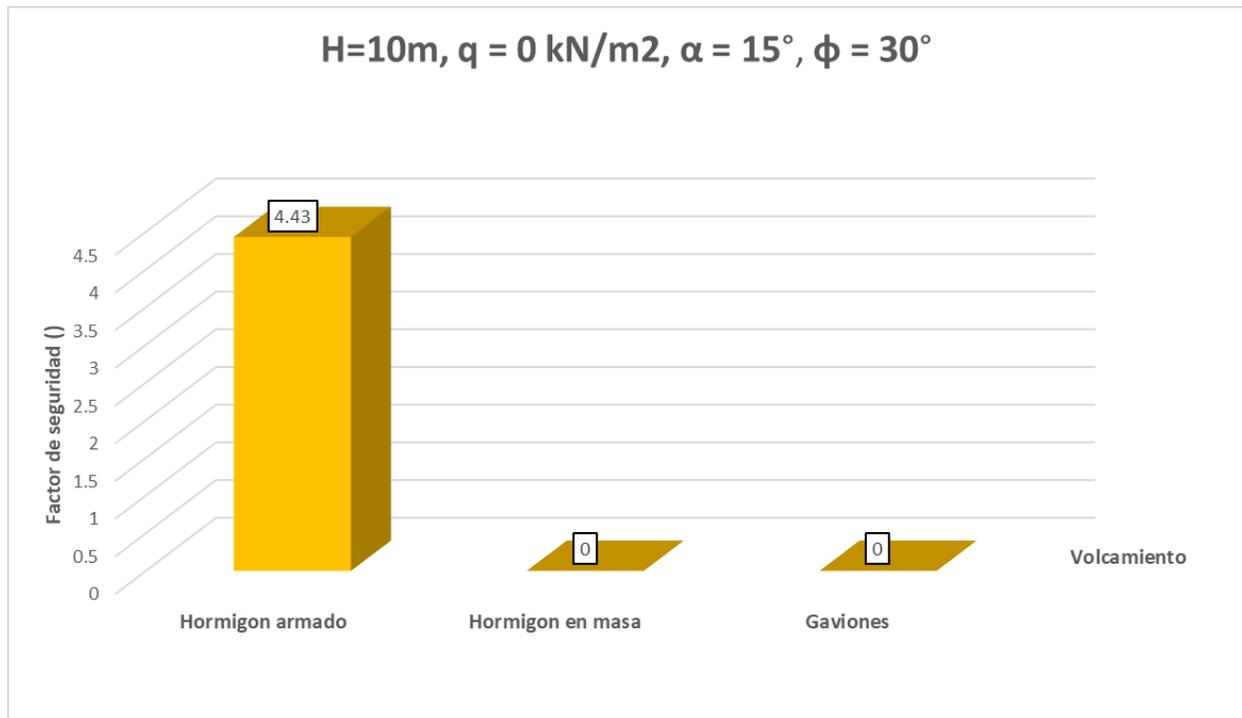
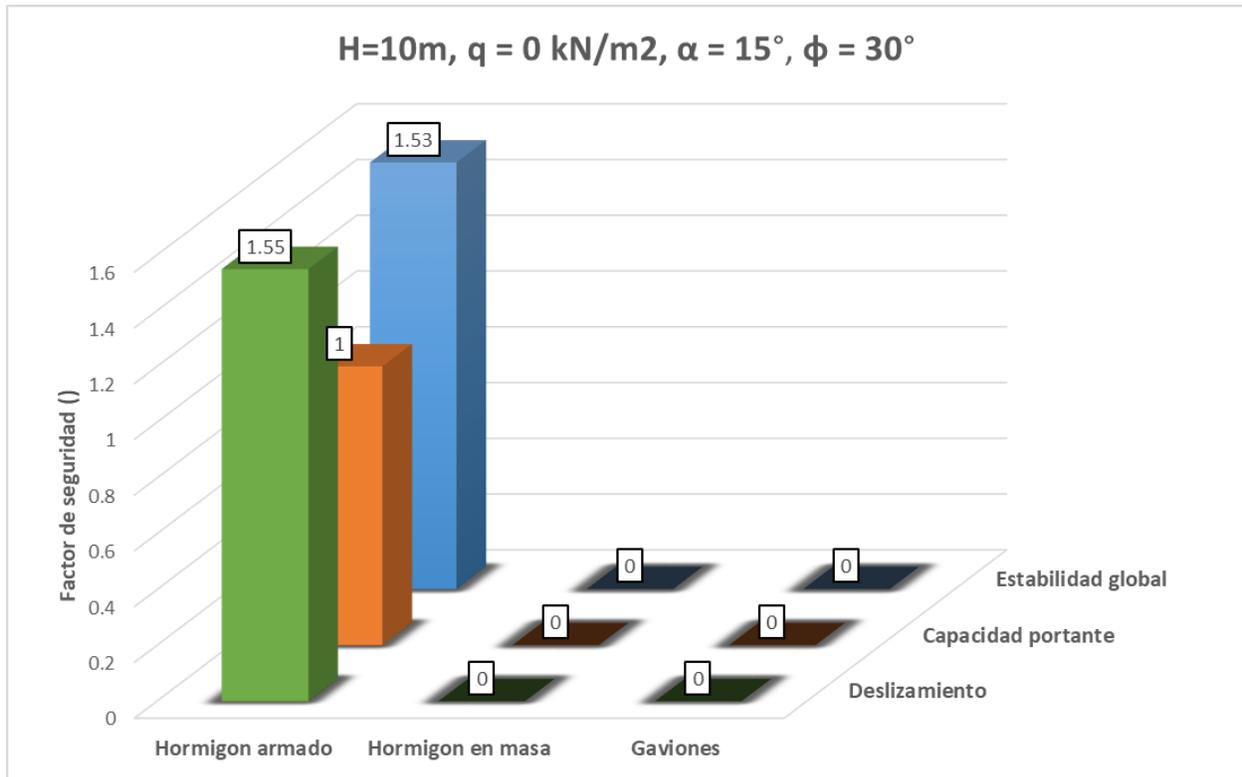


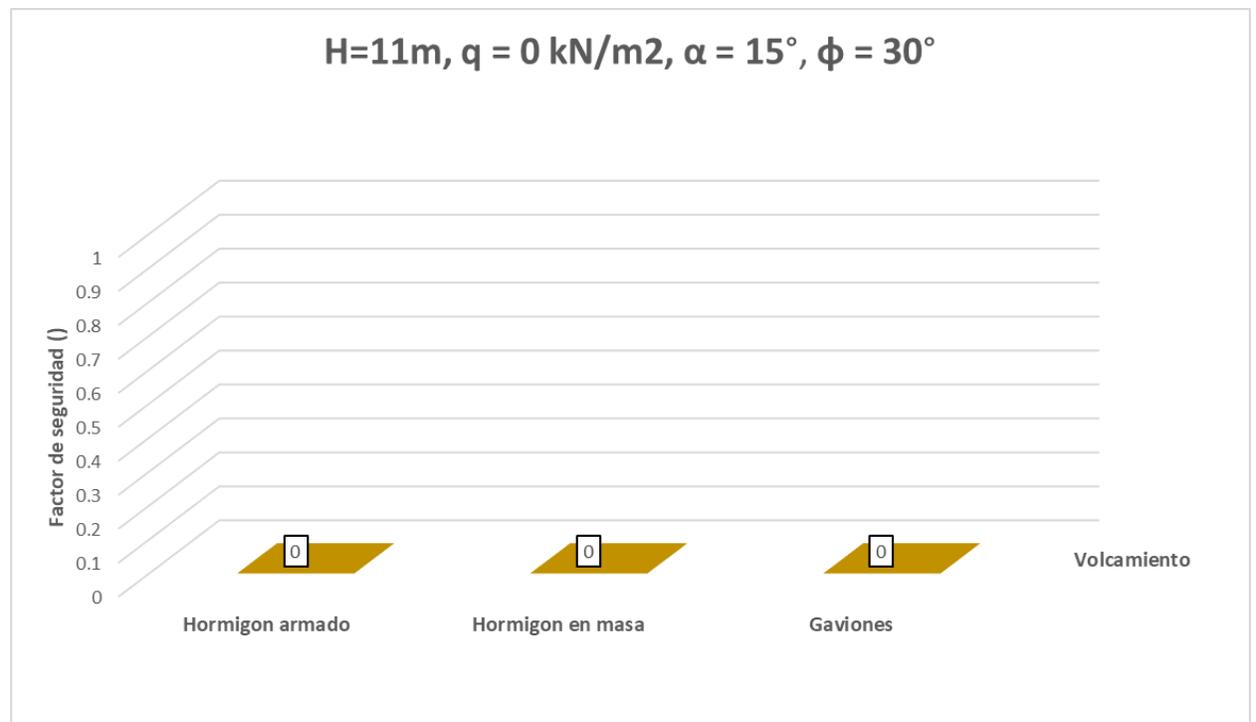
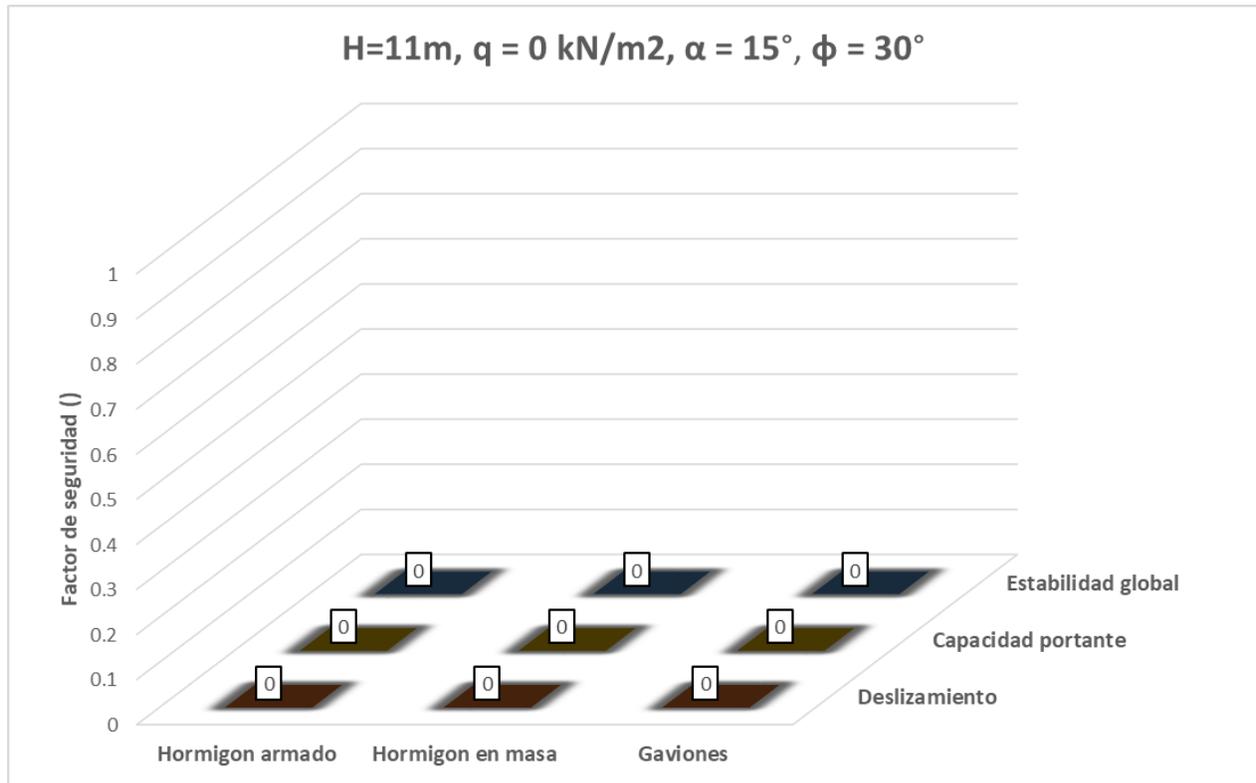


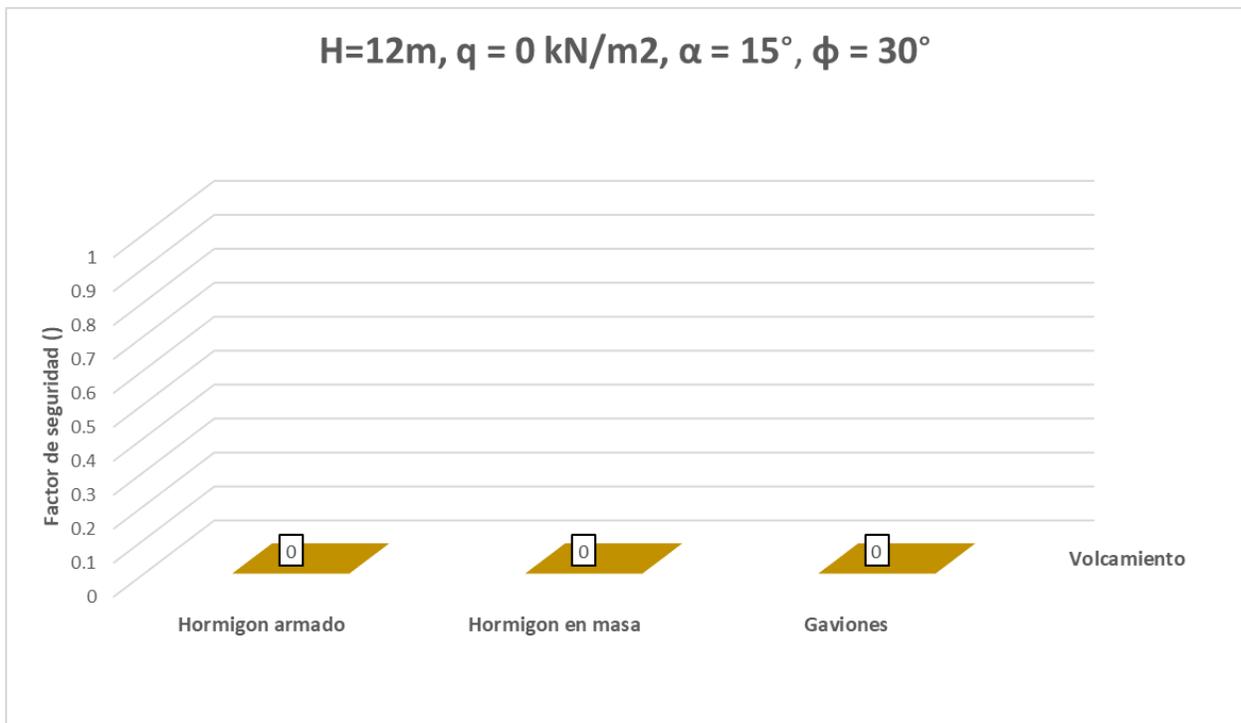
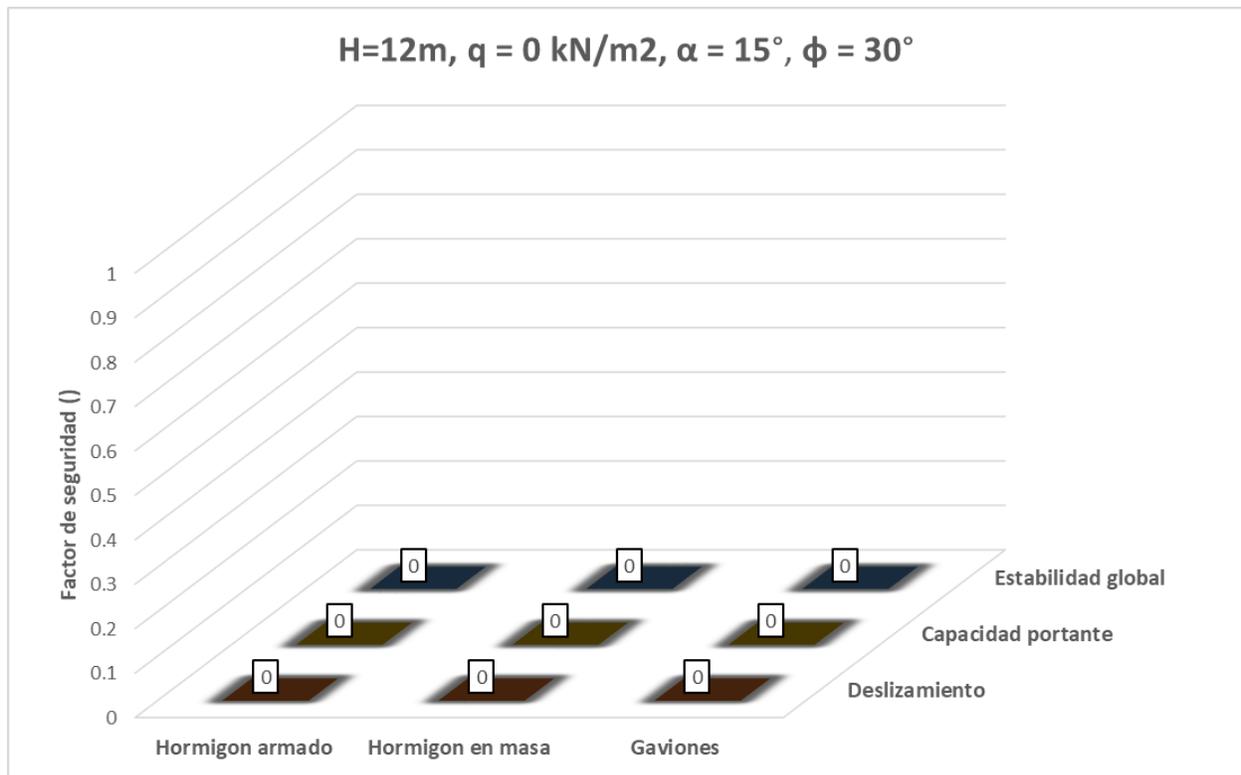


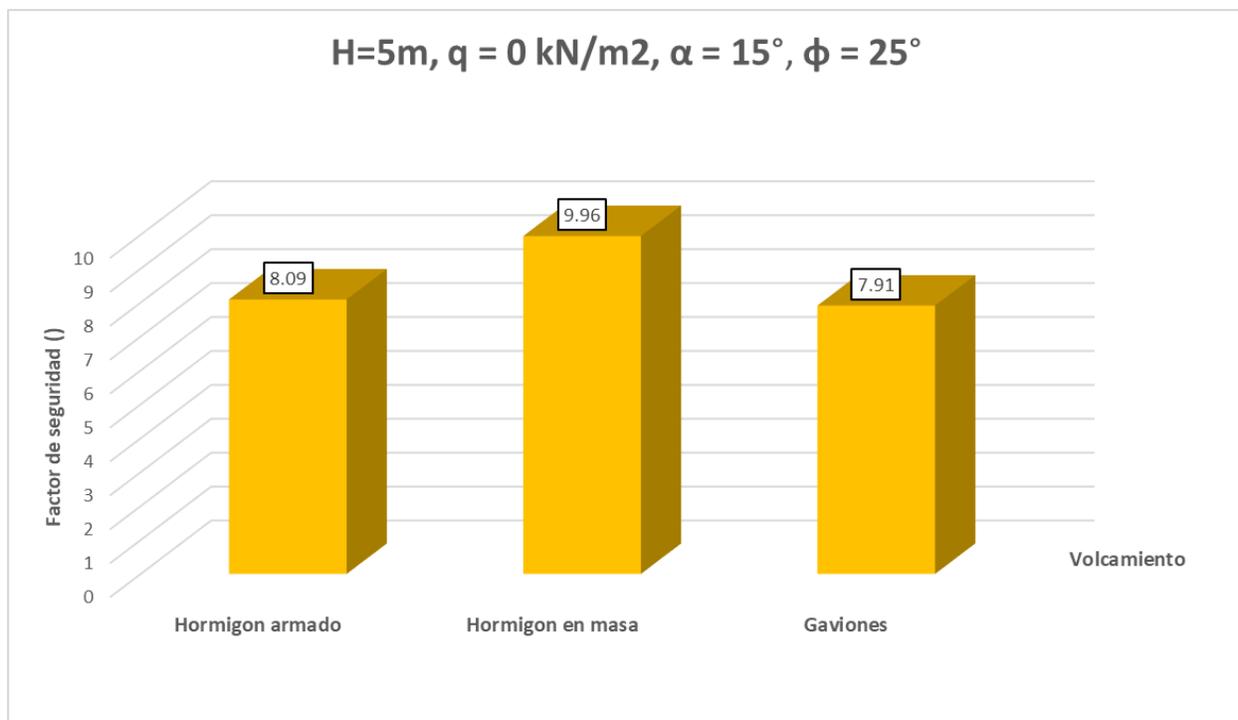
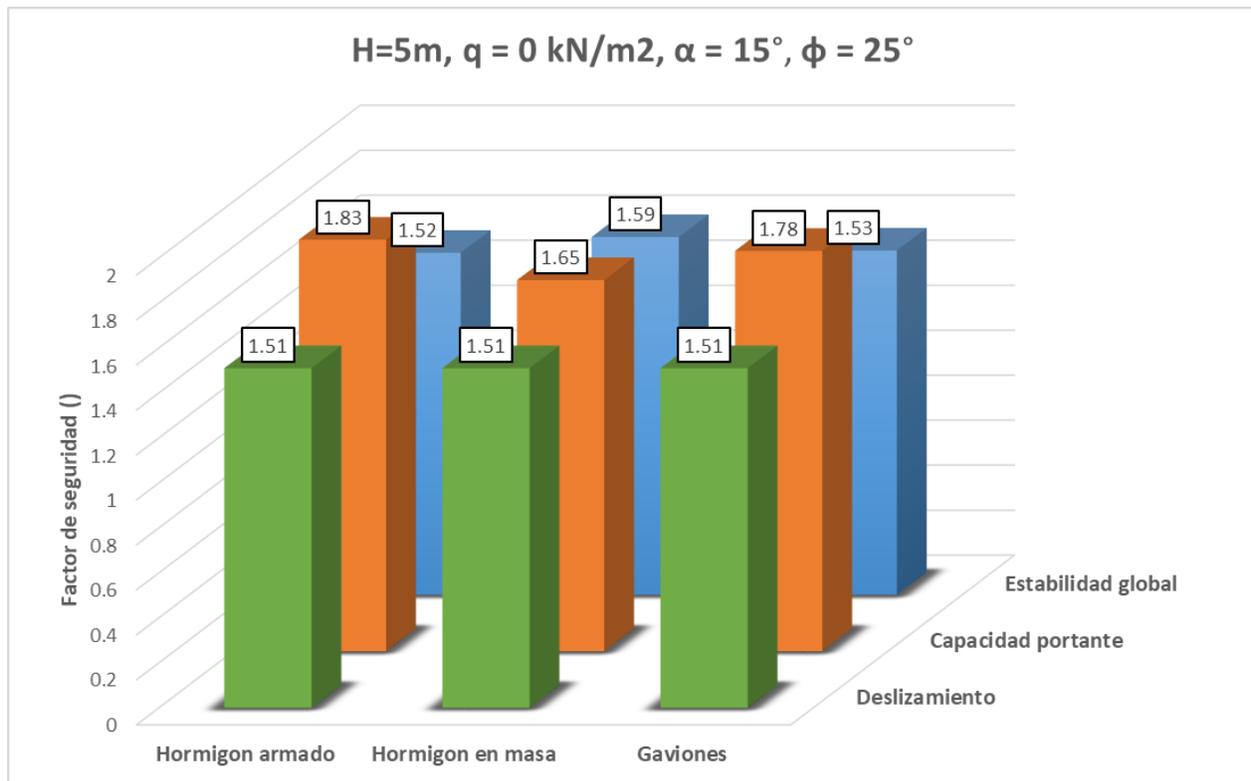


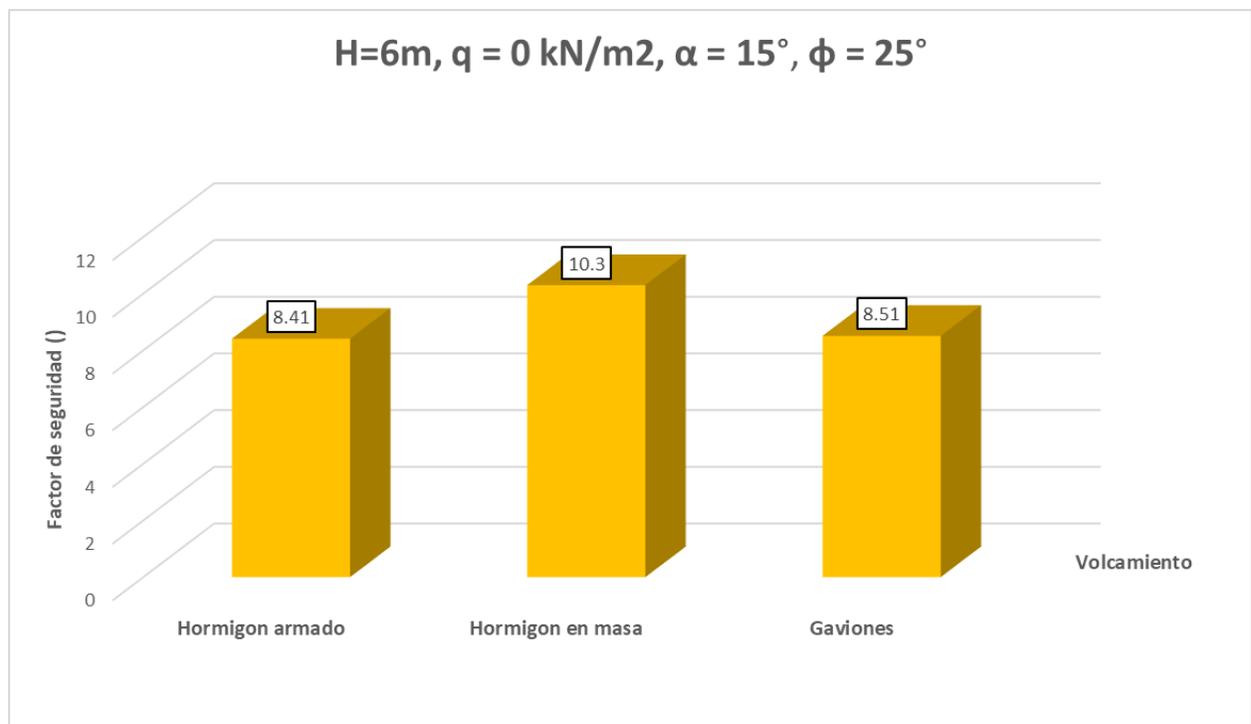
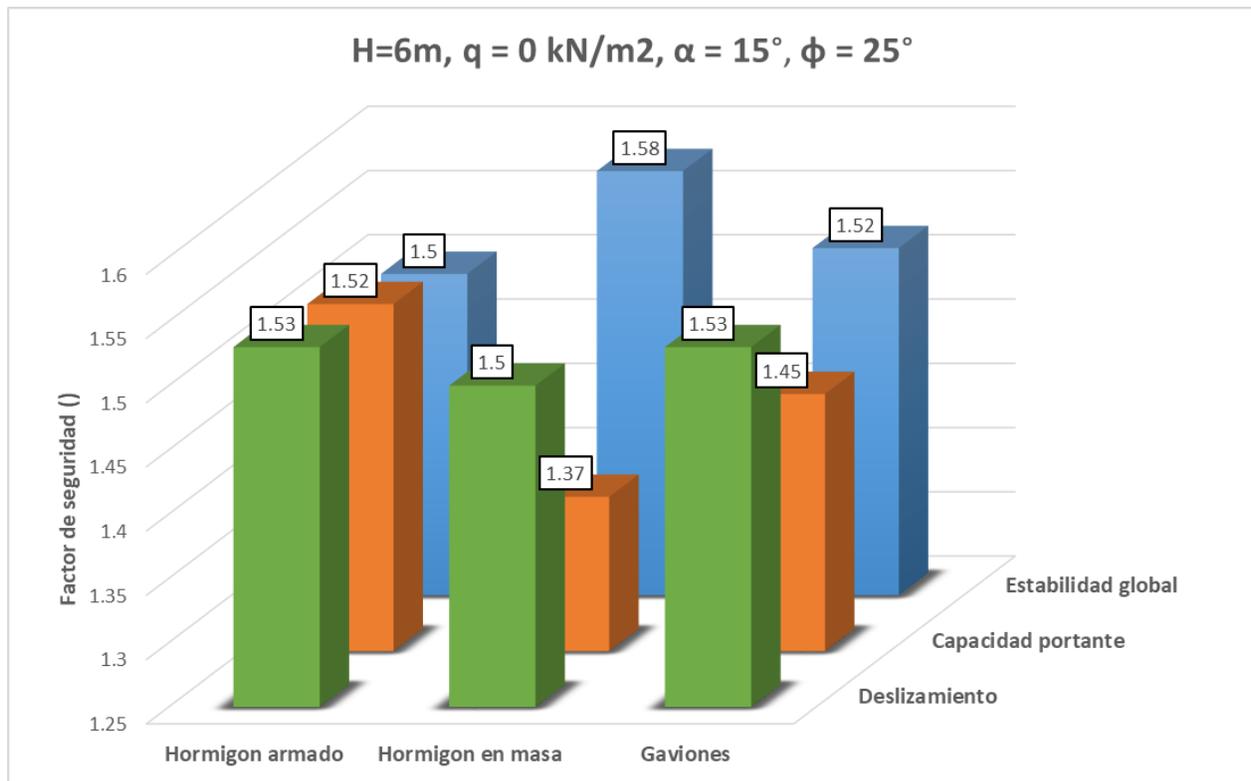


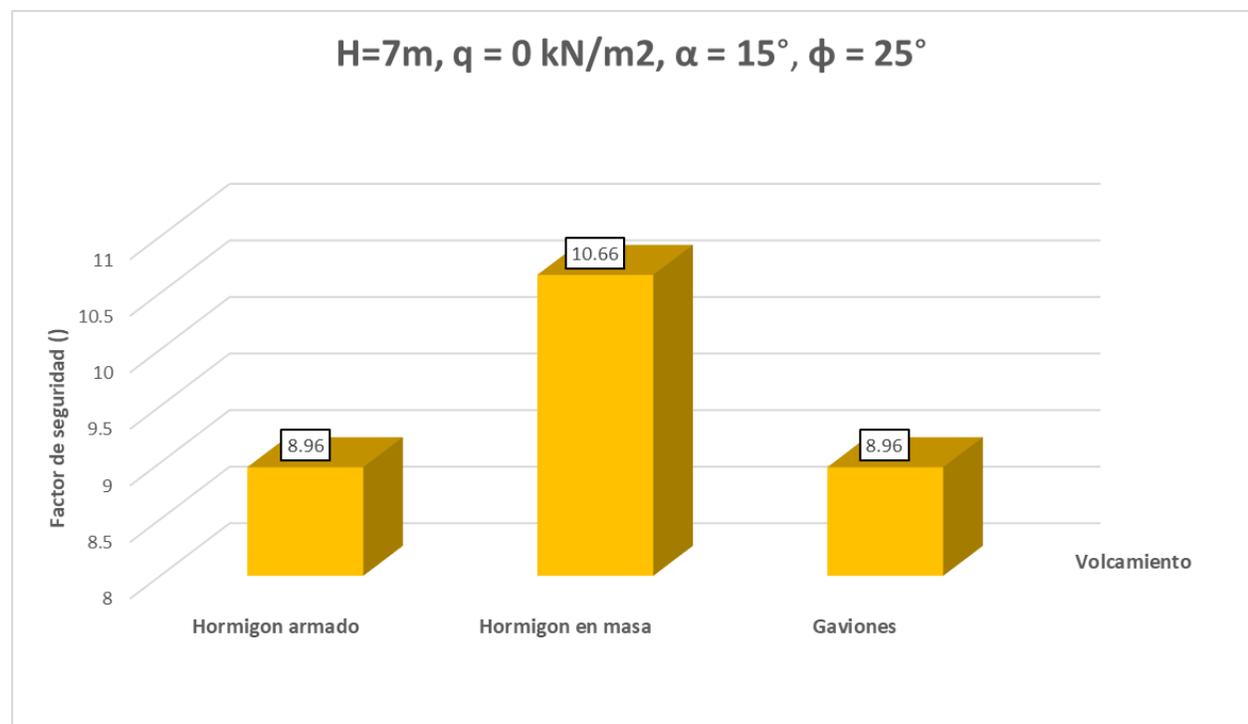
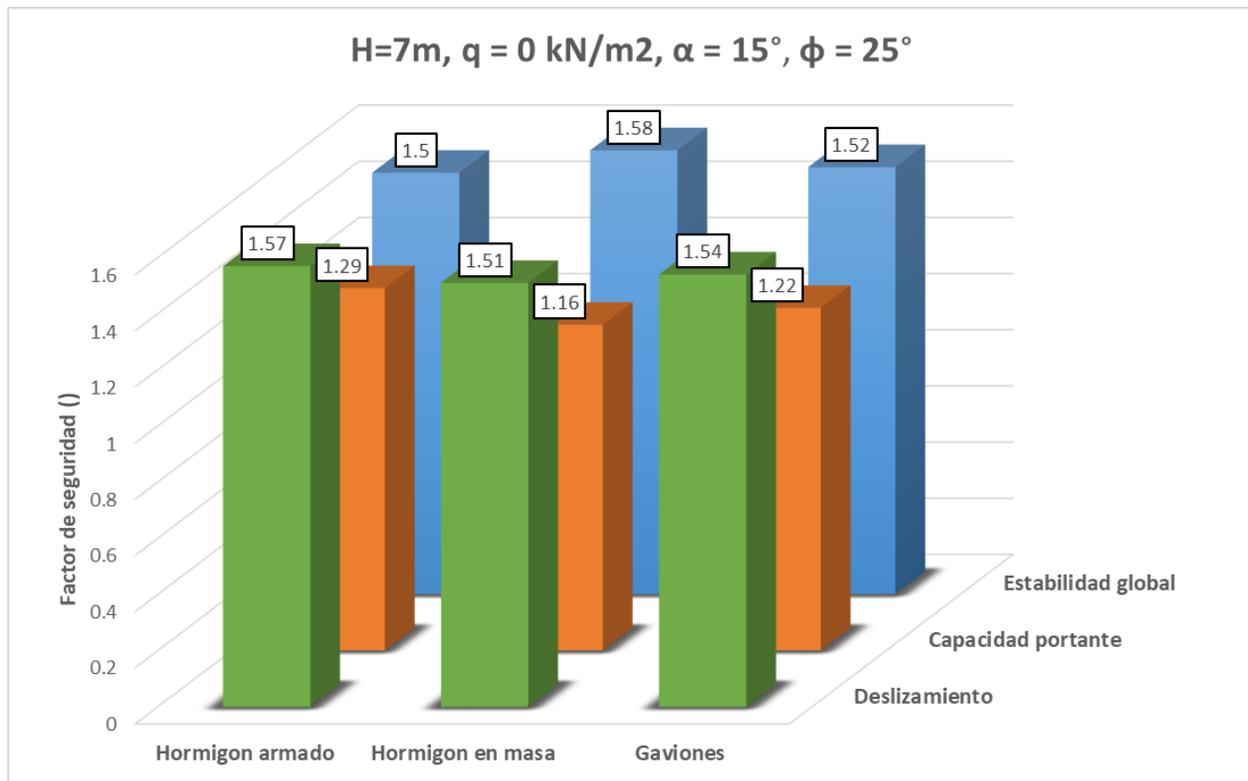


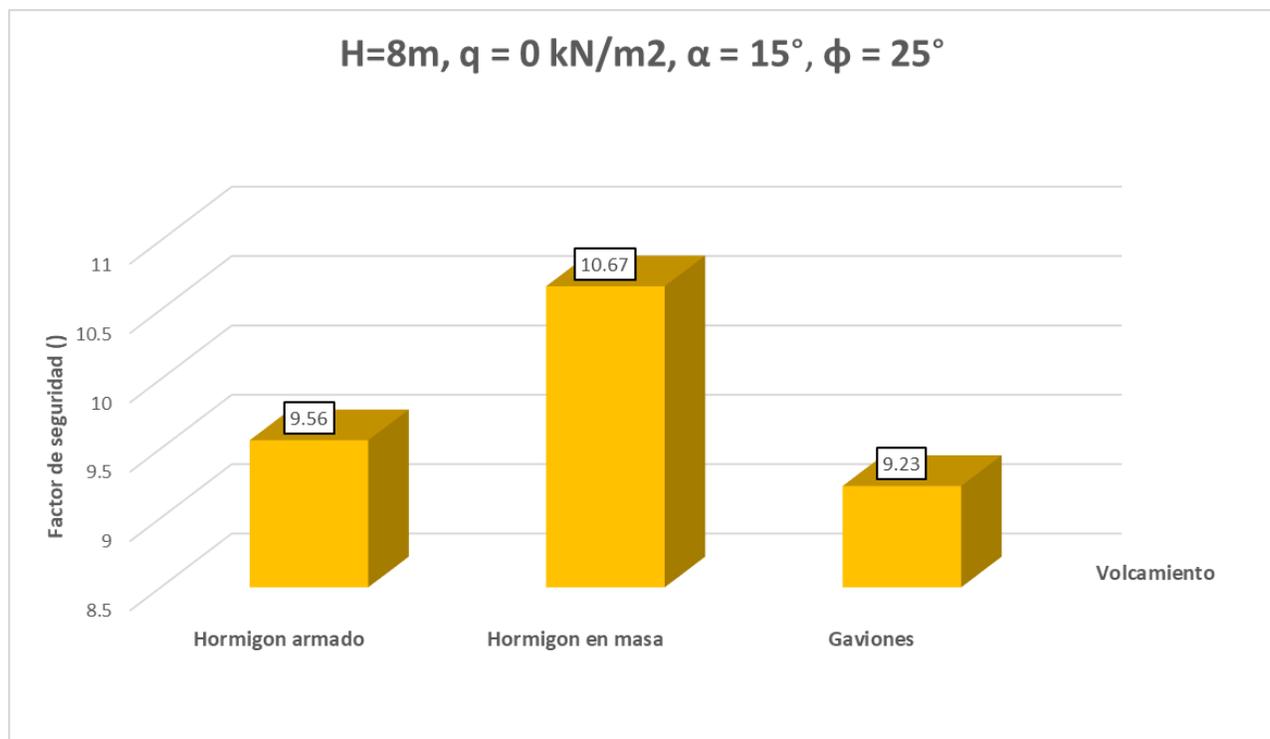
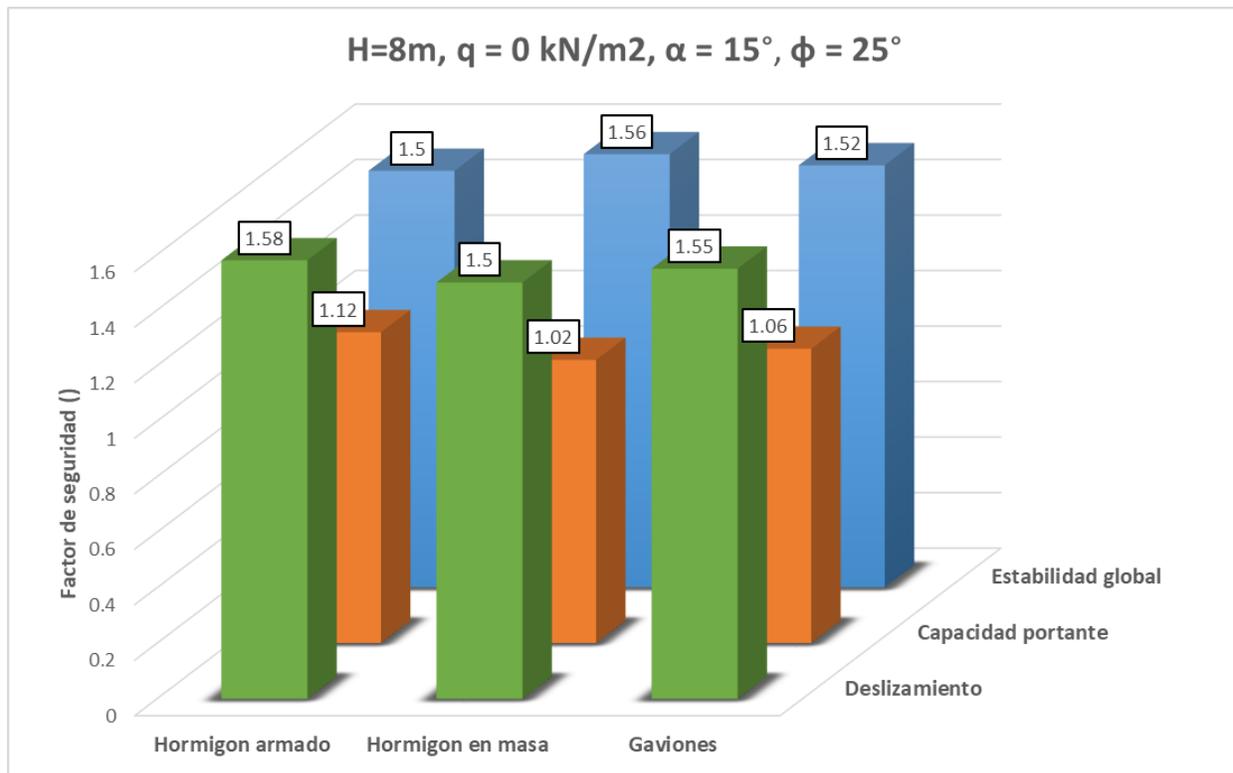


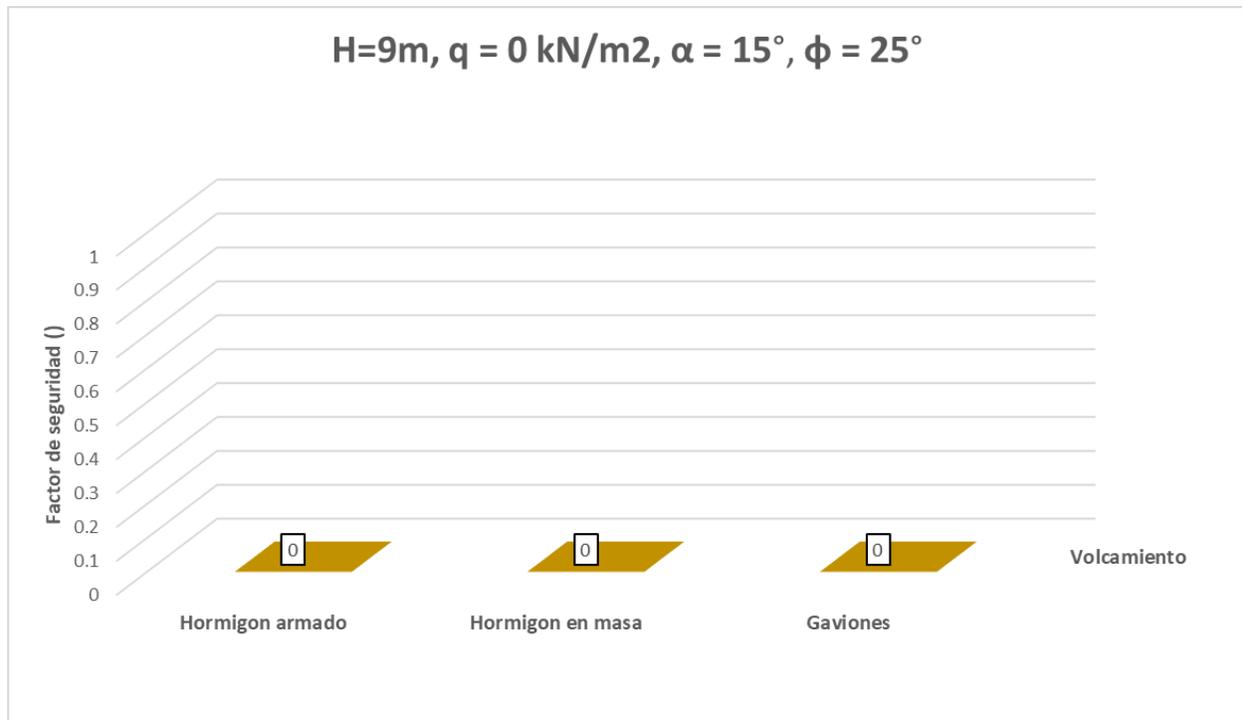
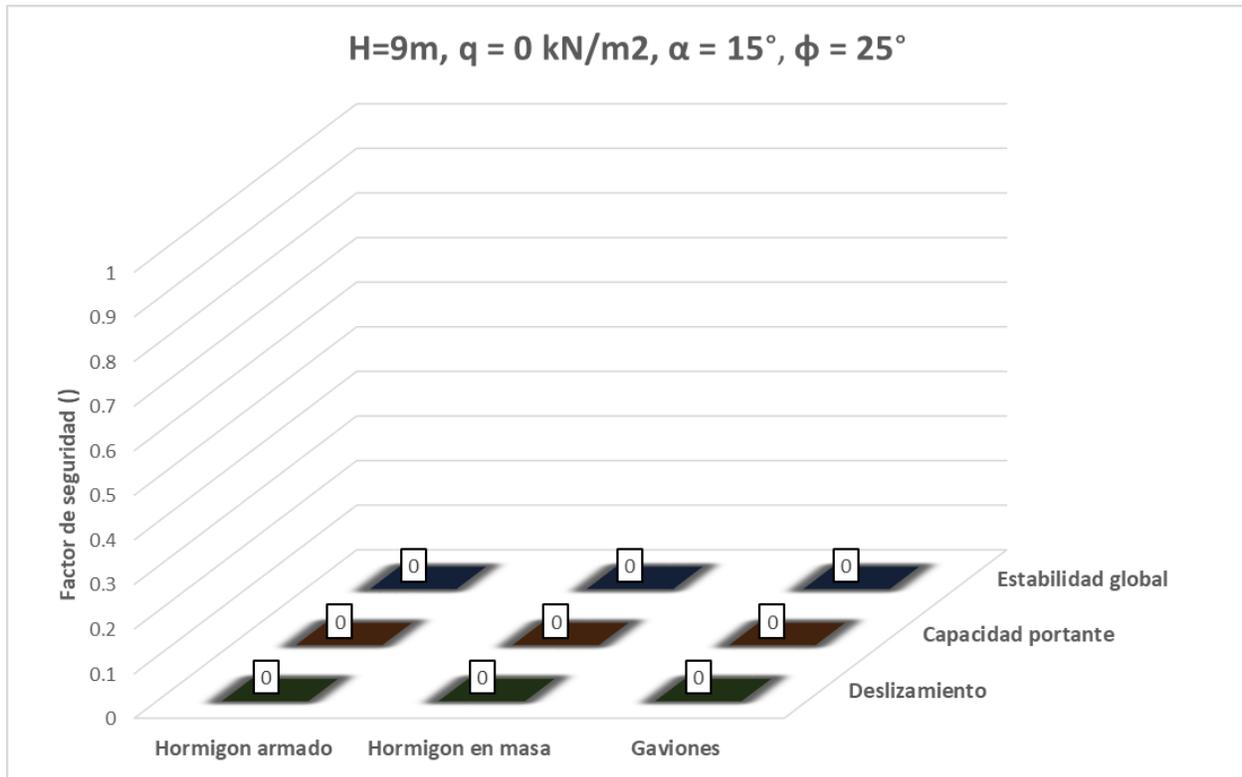


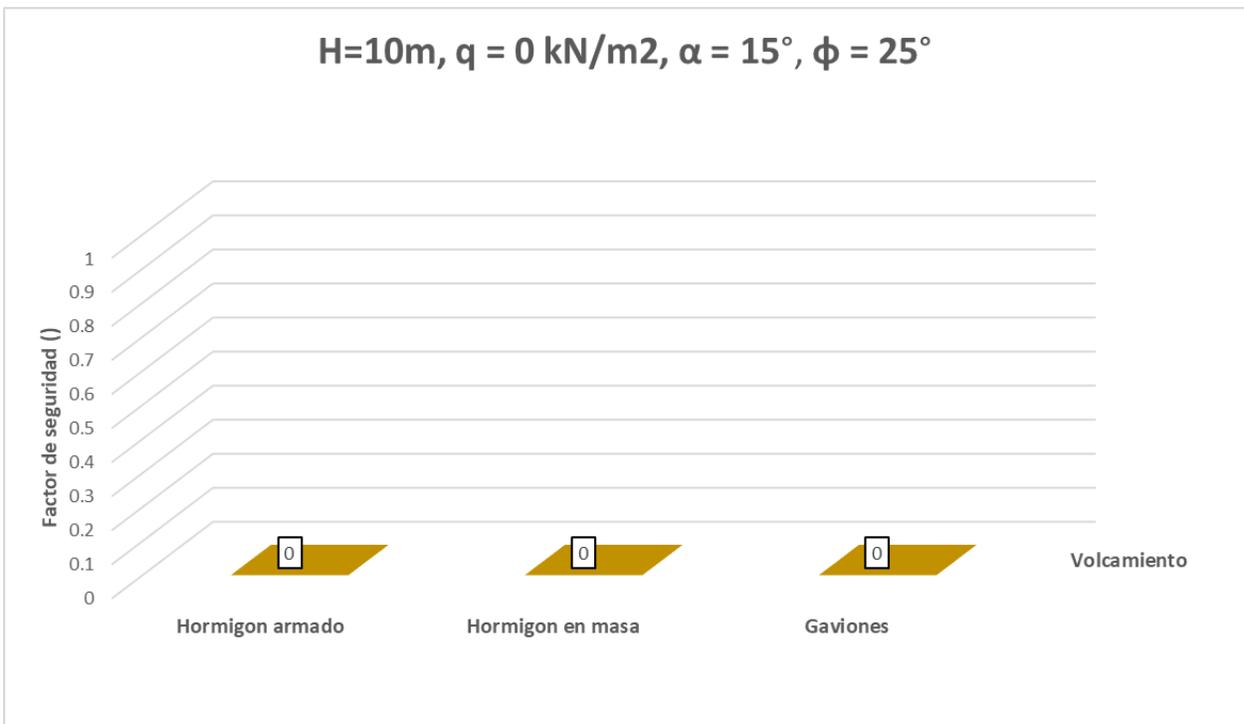
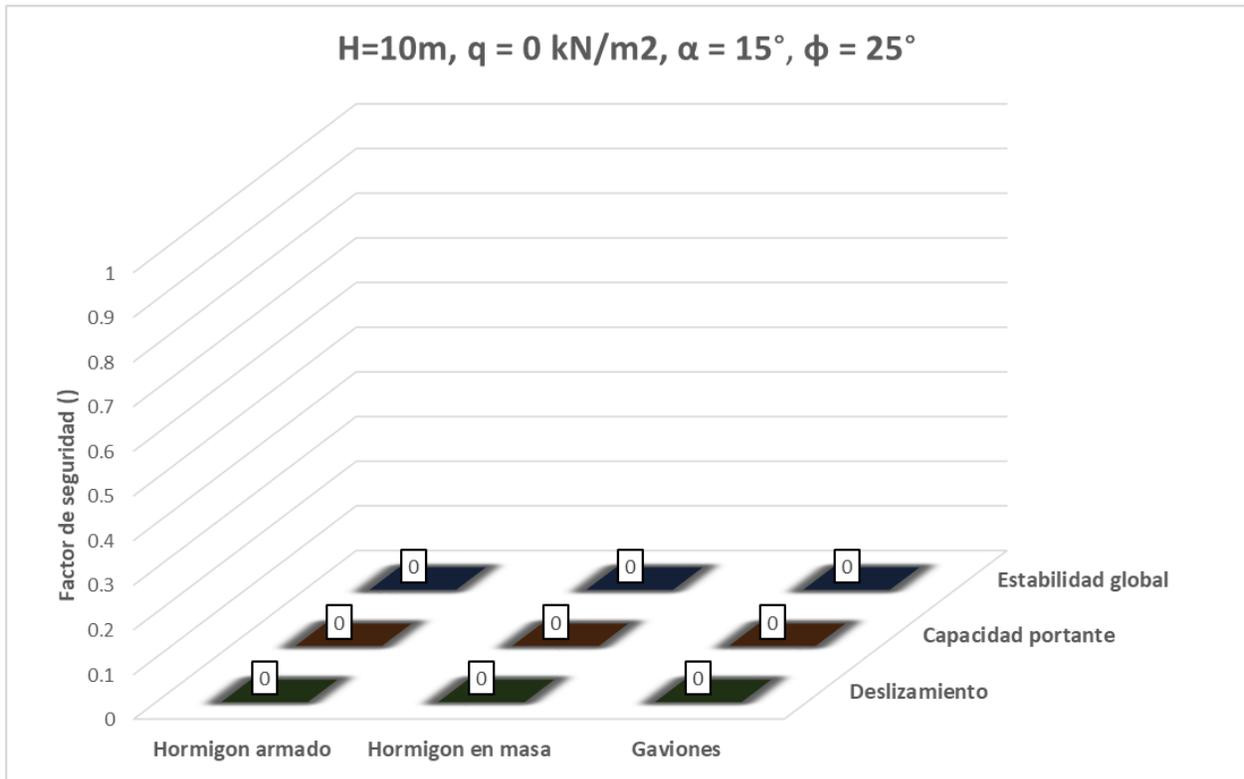


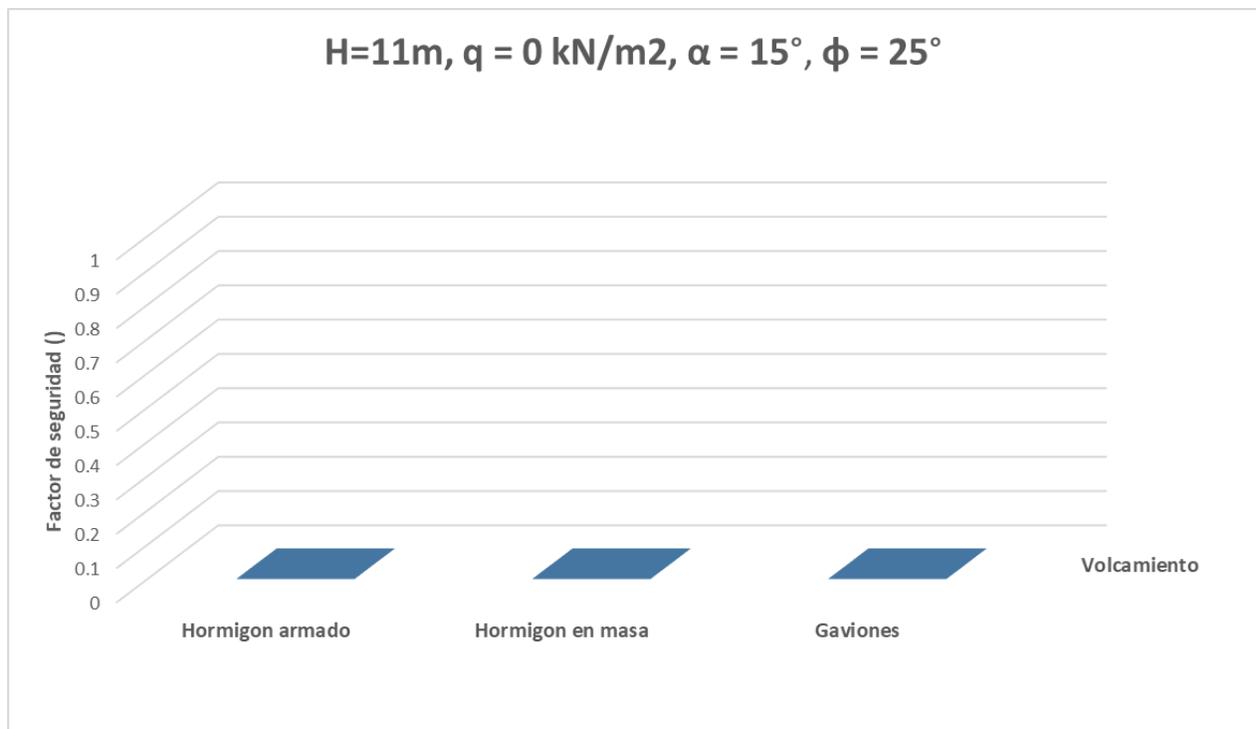
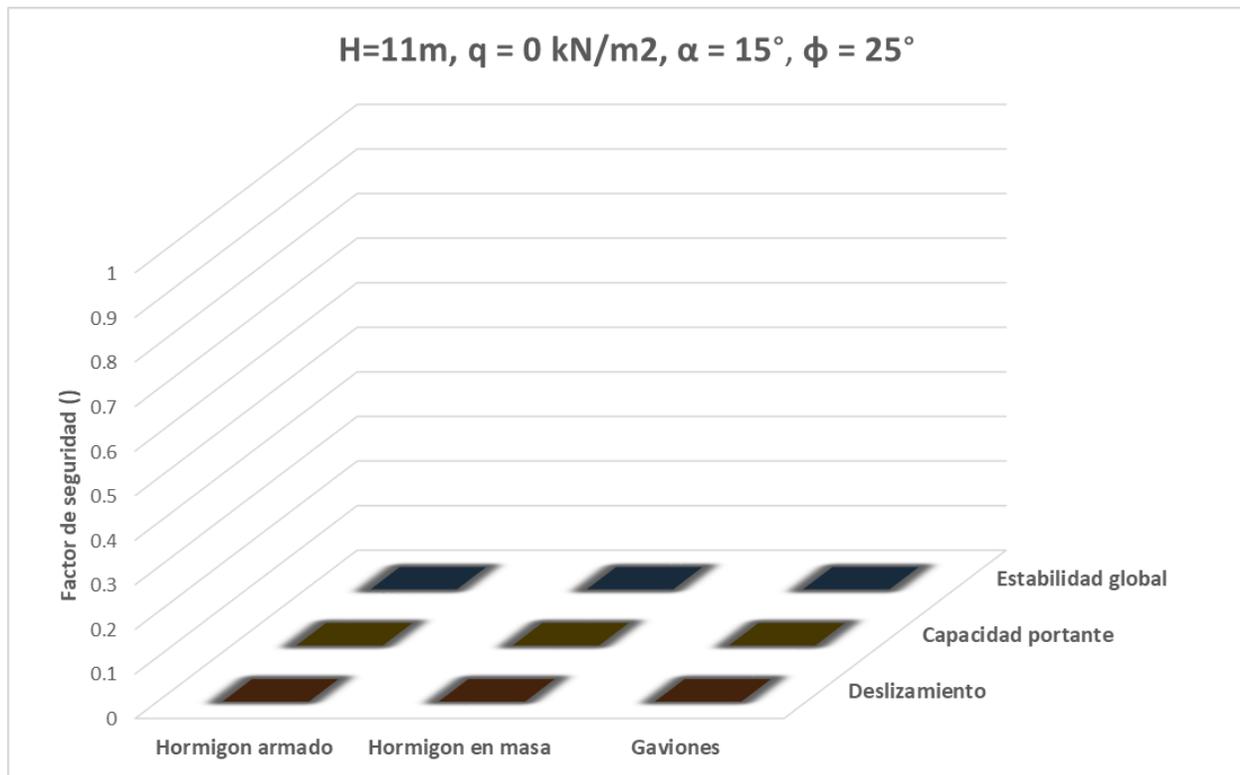


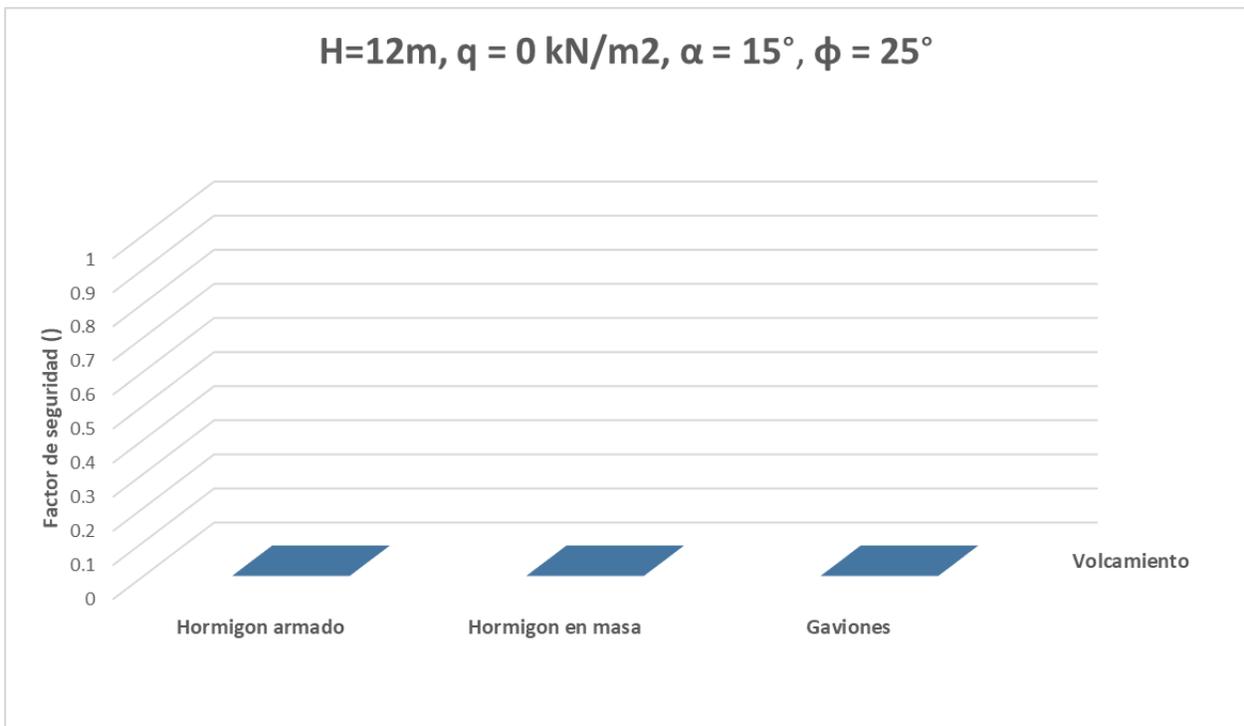
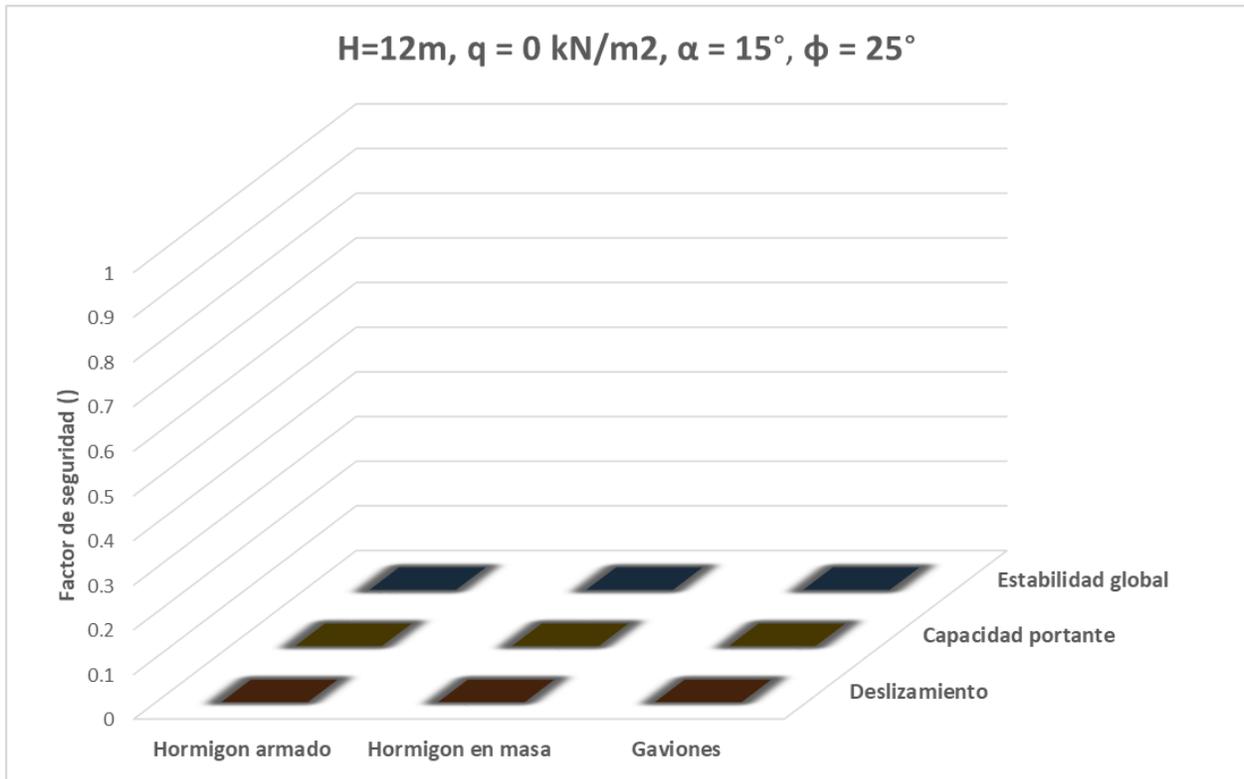






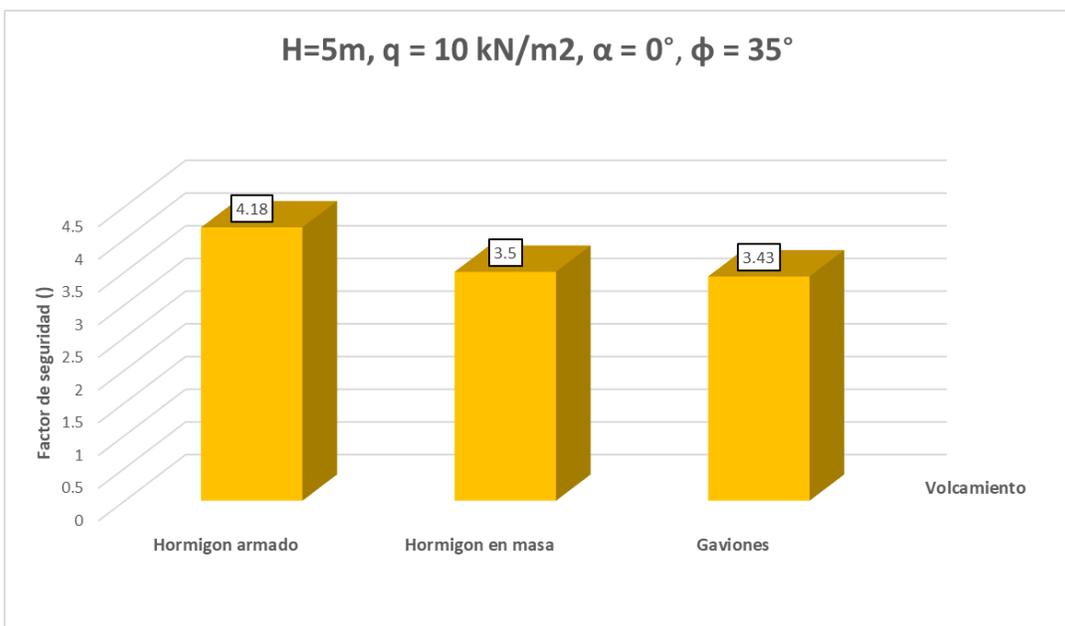
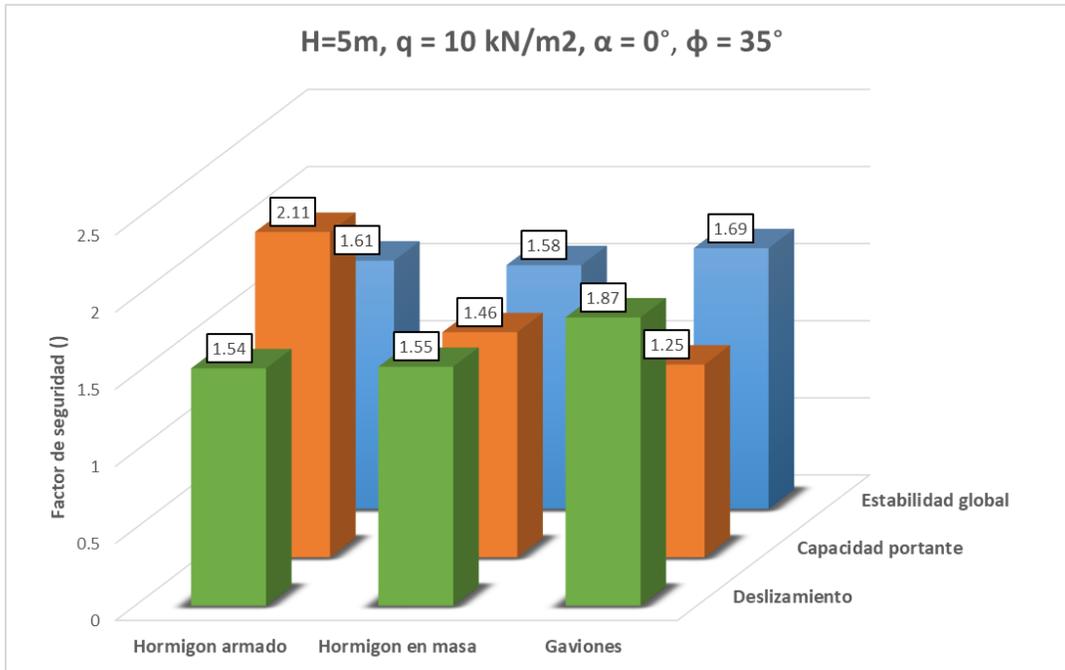


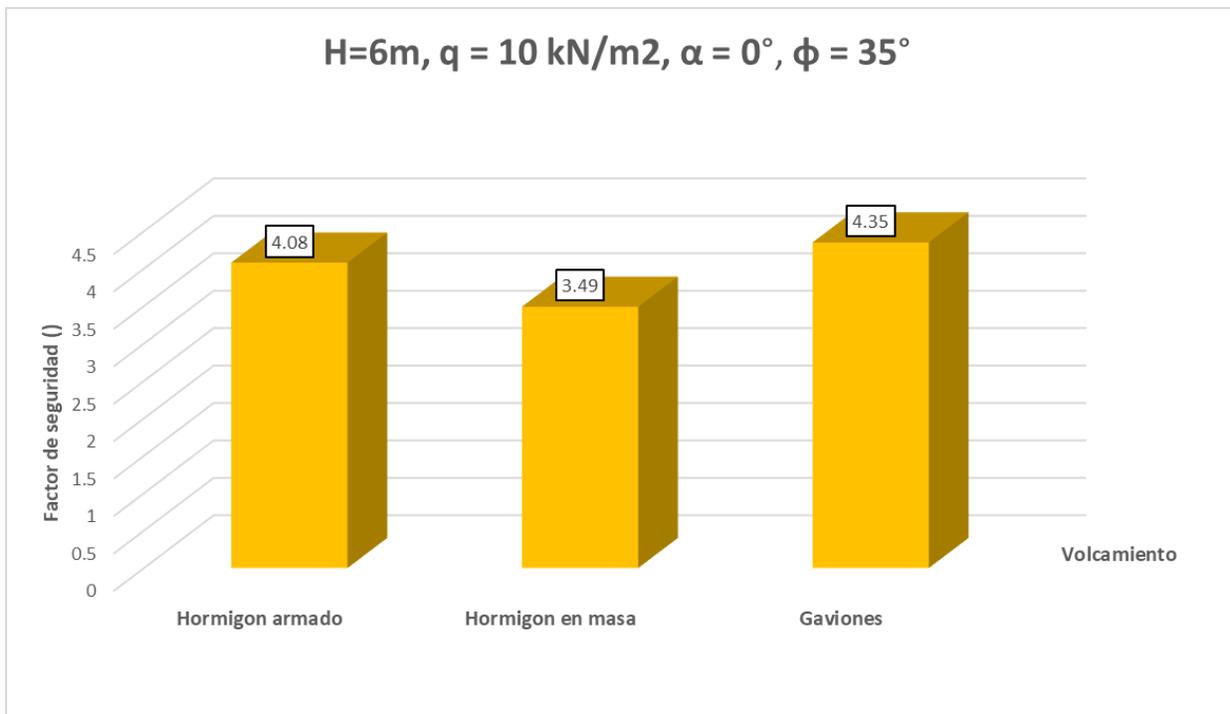
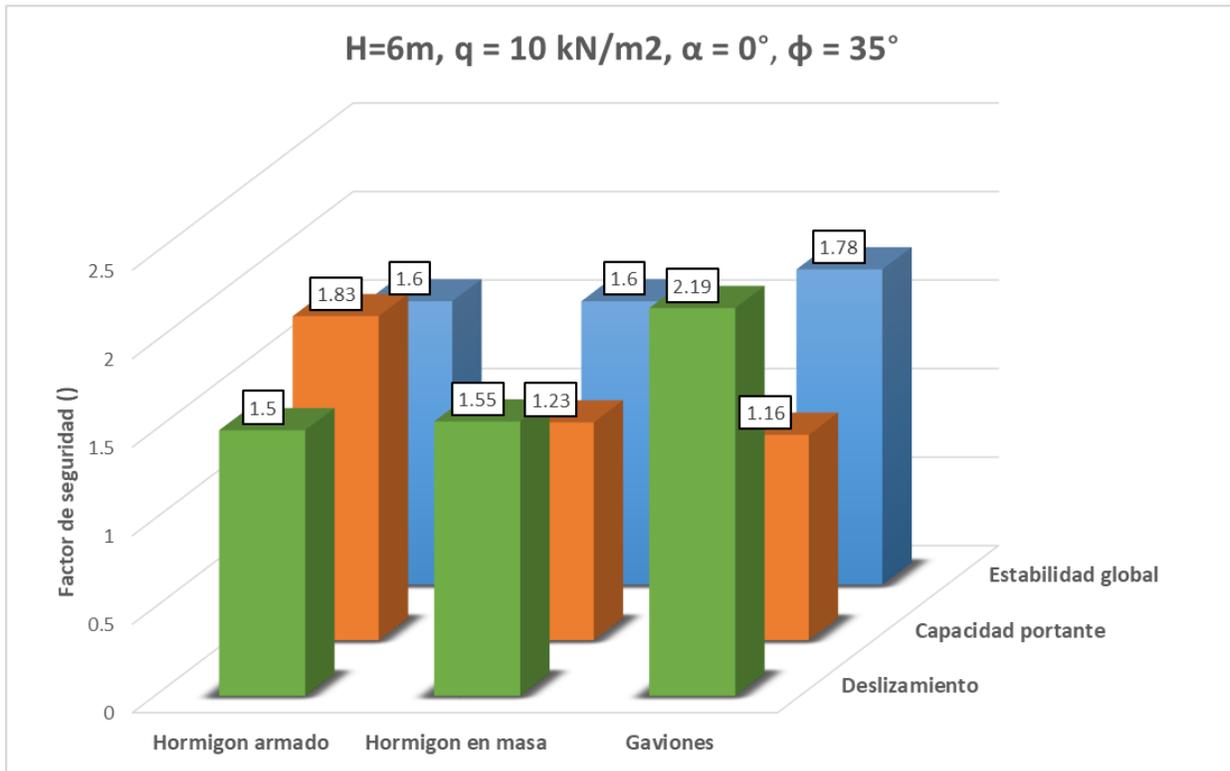


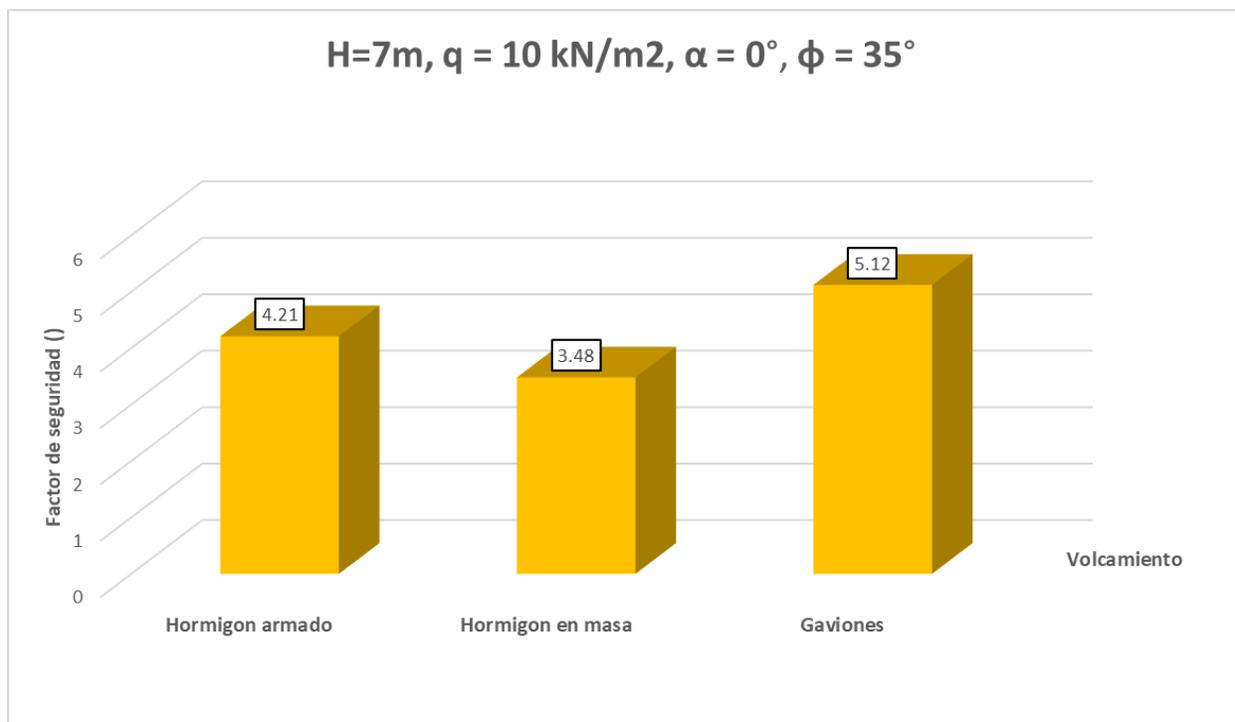
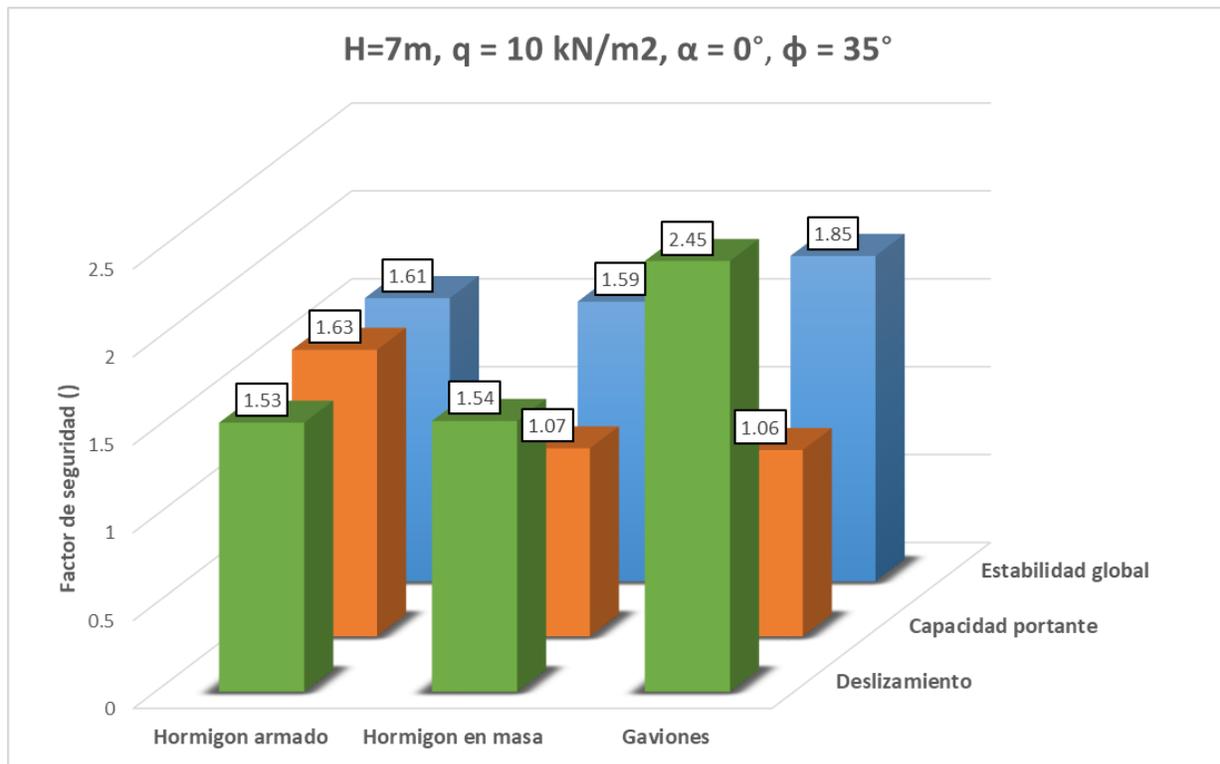


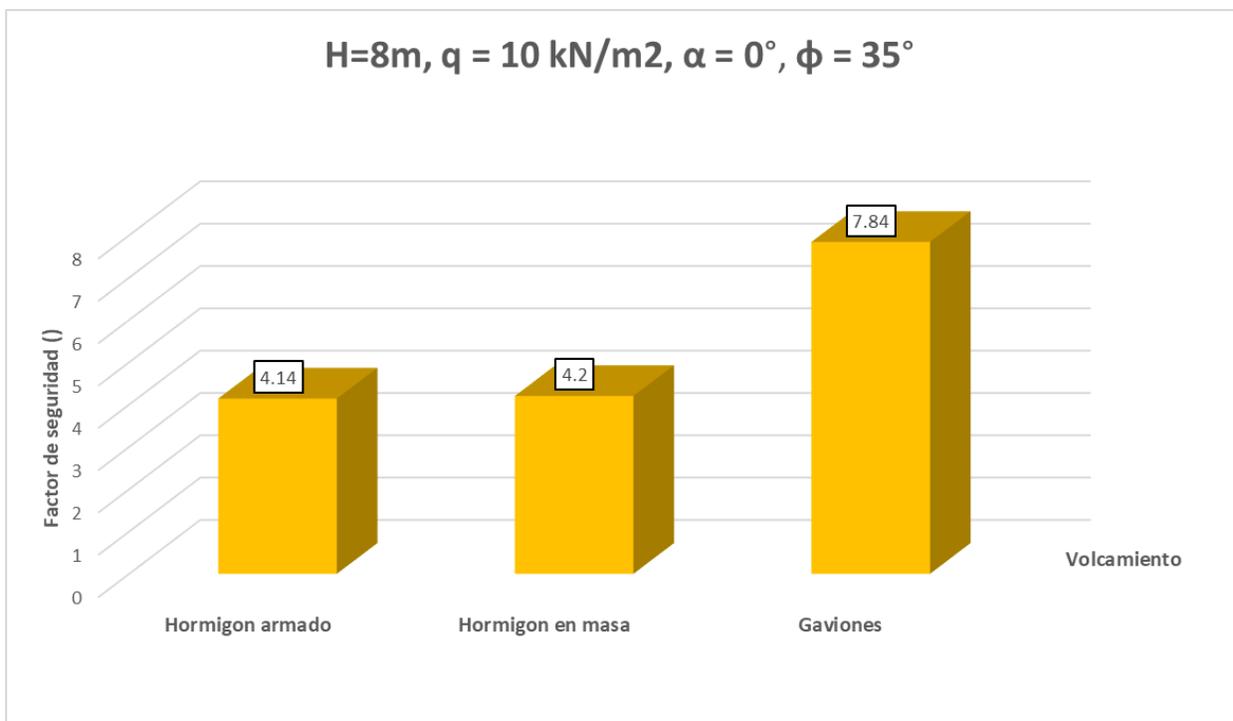
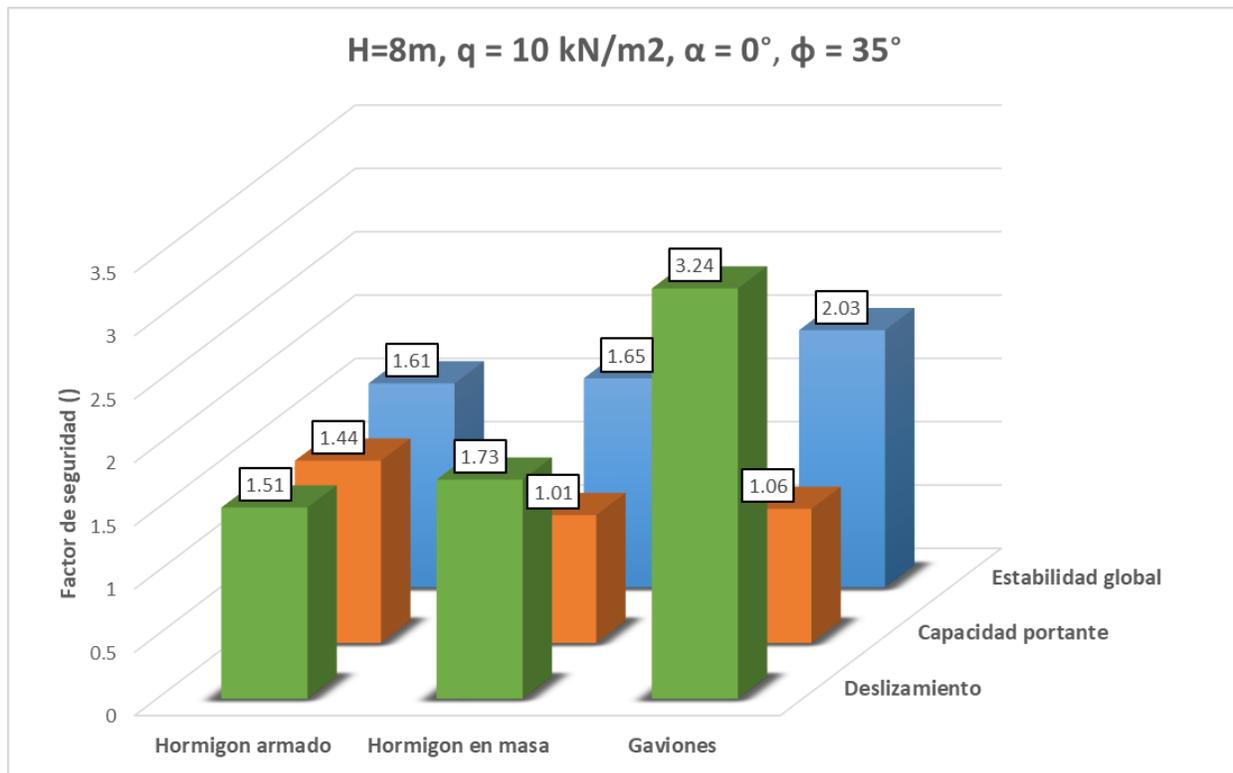
Para $q = 0$ (kN/m²), $\alpha = 15^\circ$ y $\phi = 20^\circ$ con las alturas de 5m a 12m no se tiene solución como los gráficos iguales a 0 mostrados anteriormente.

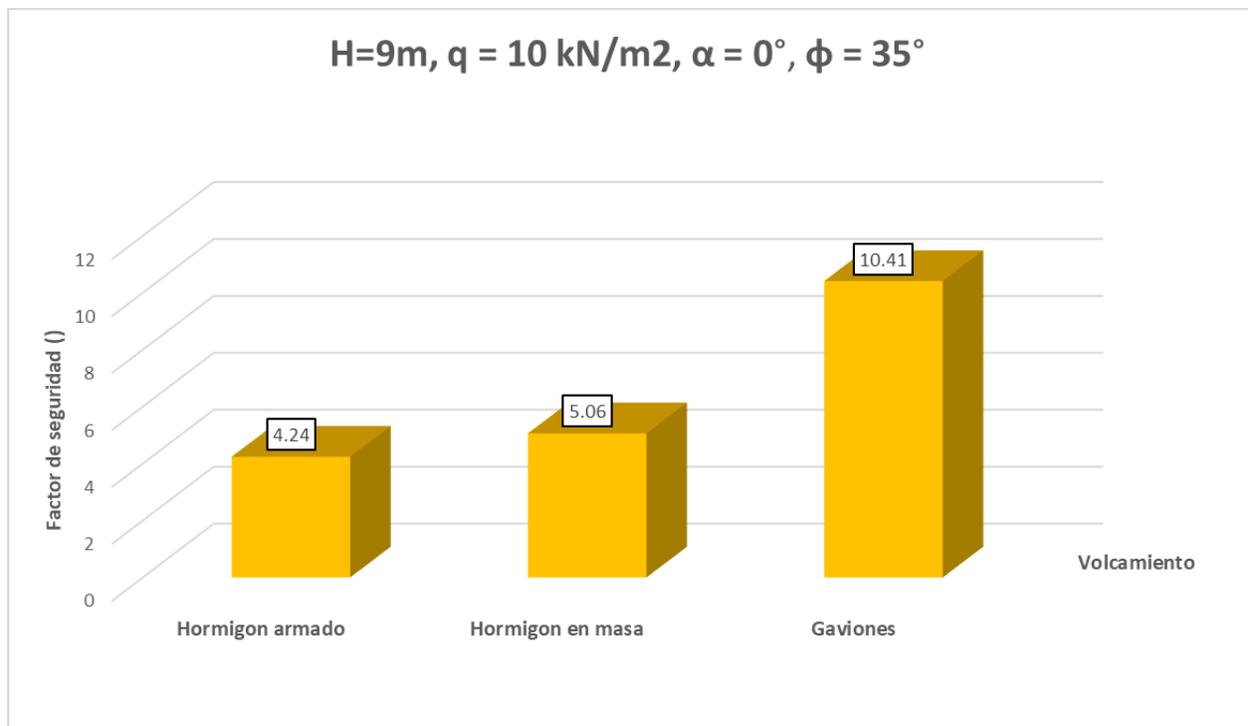
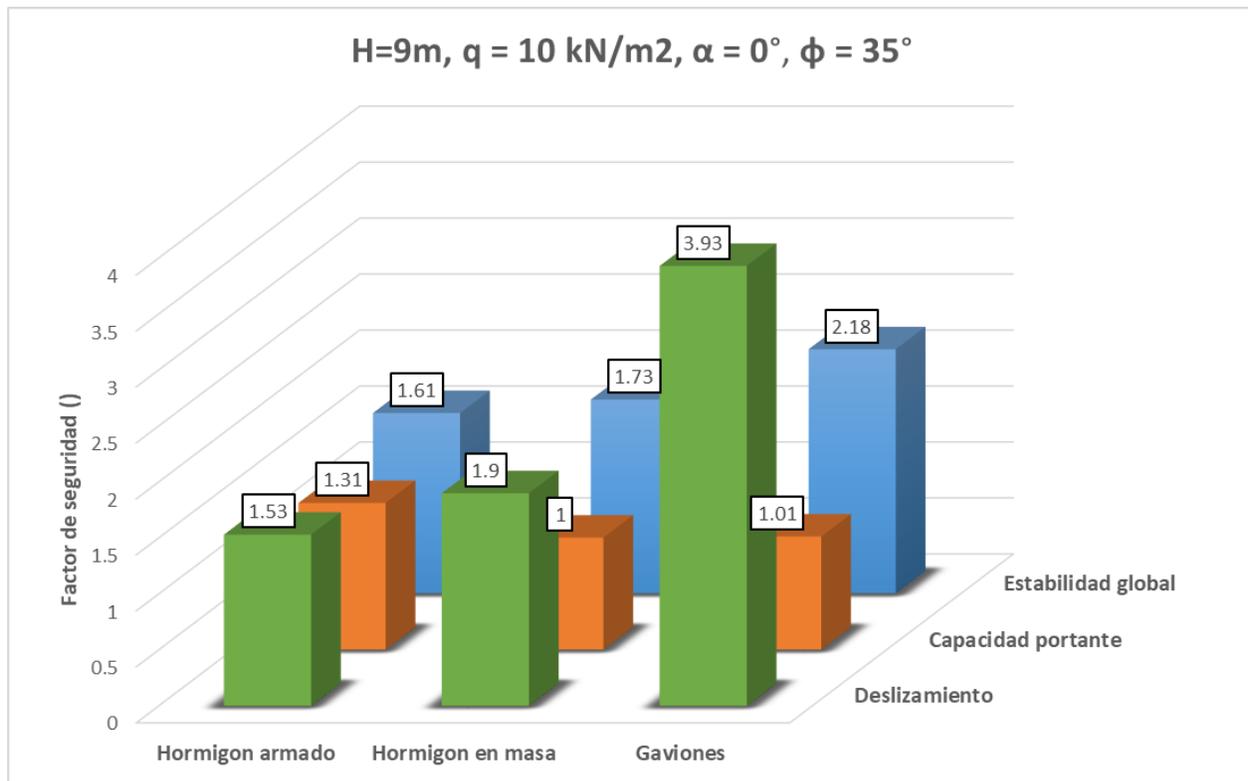
Para $q = 0$ (kN/m²), $\alpha = 30^\circ$ y $\phi = 35^\circ, 30^\circ, 25^\circ$ y 20° con las alturas de 5m a 12m no se tiene solución.

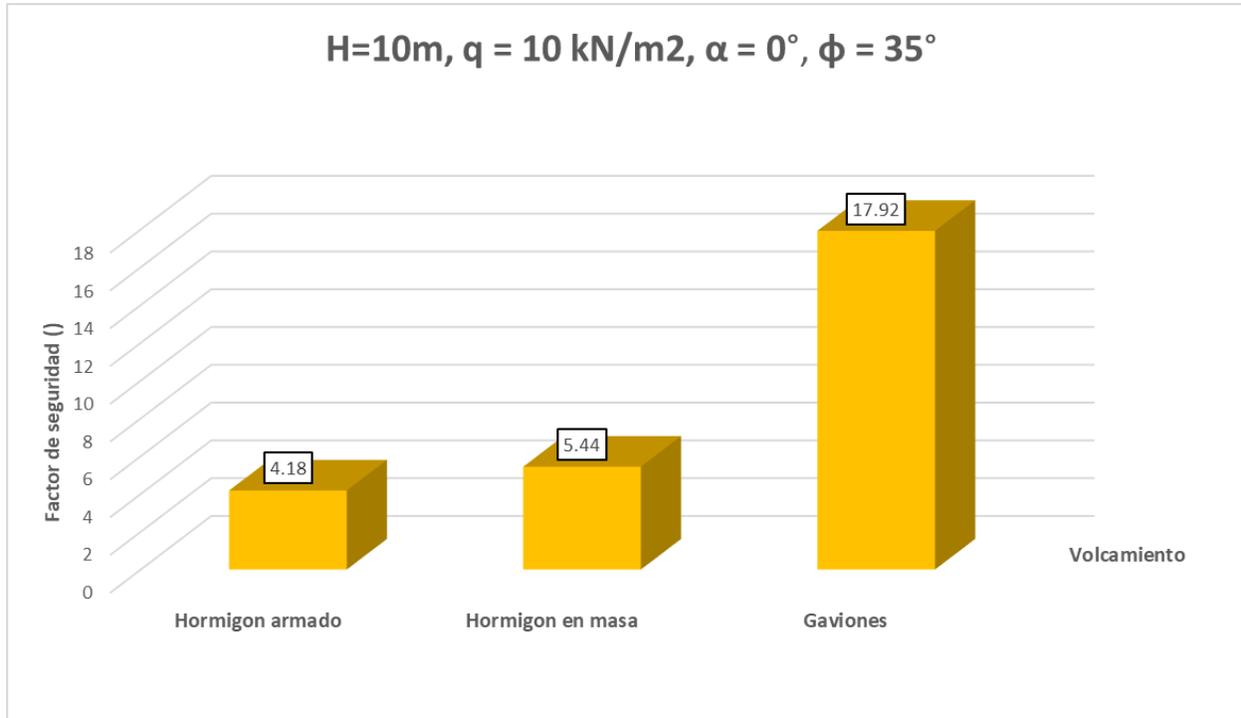
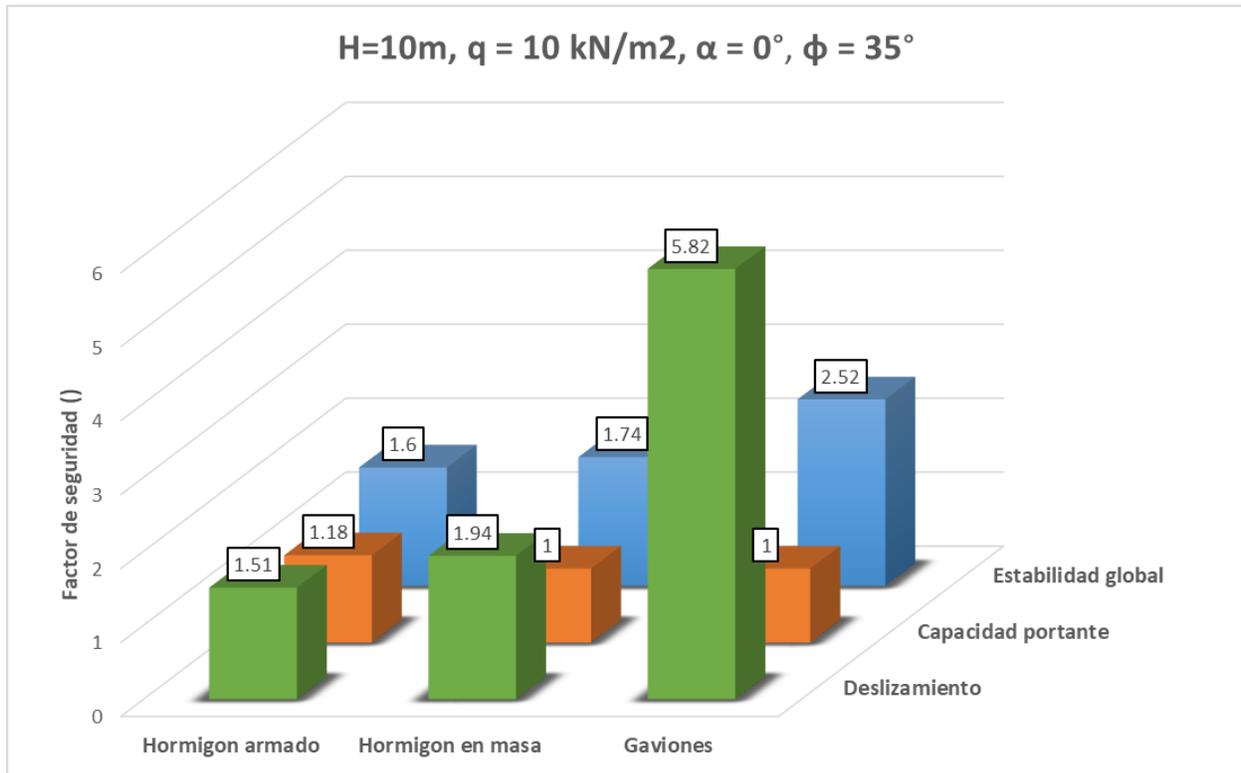


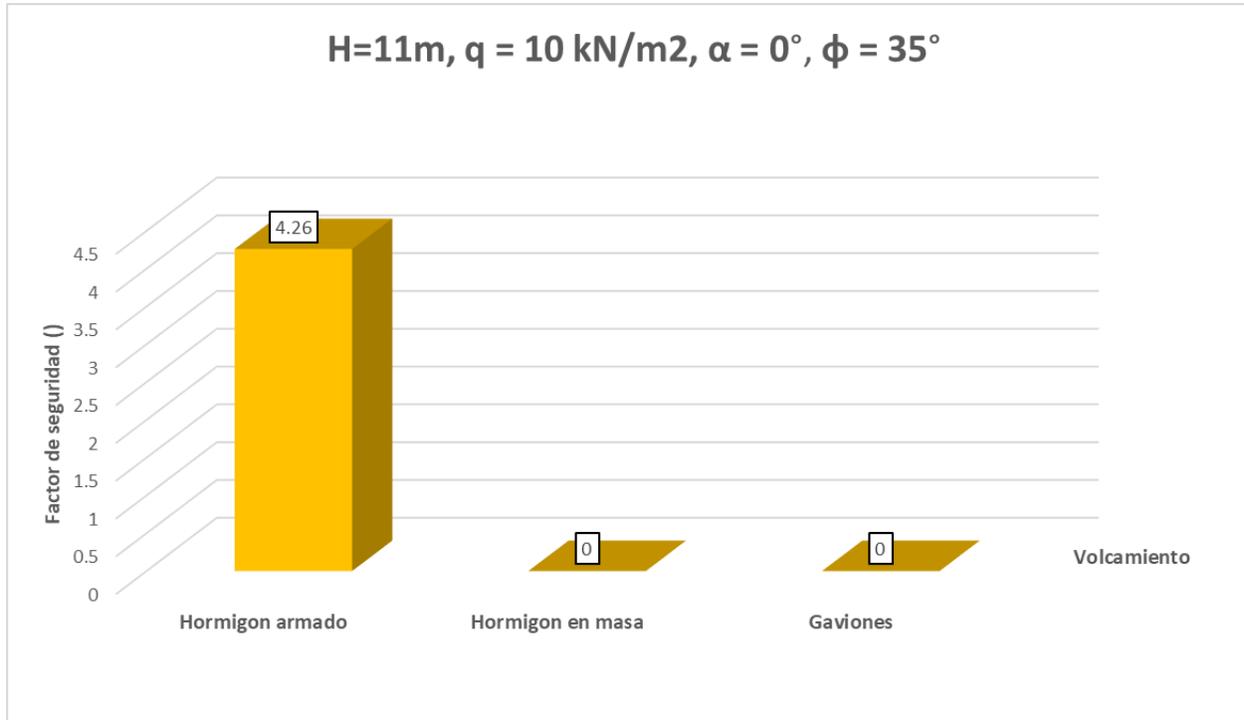
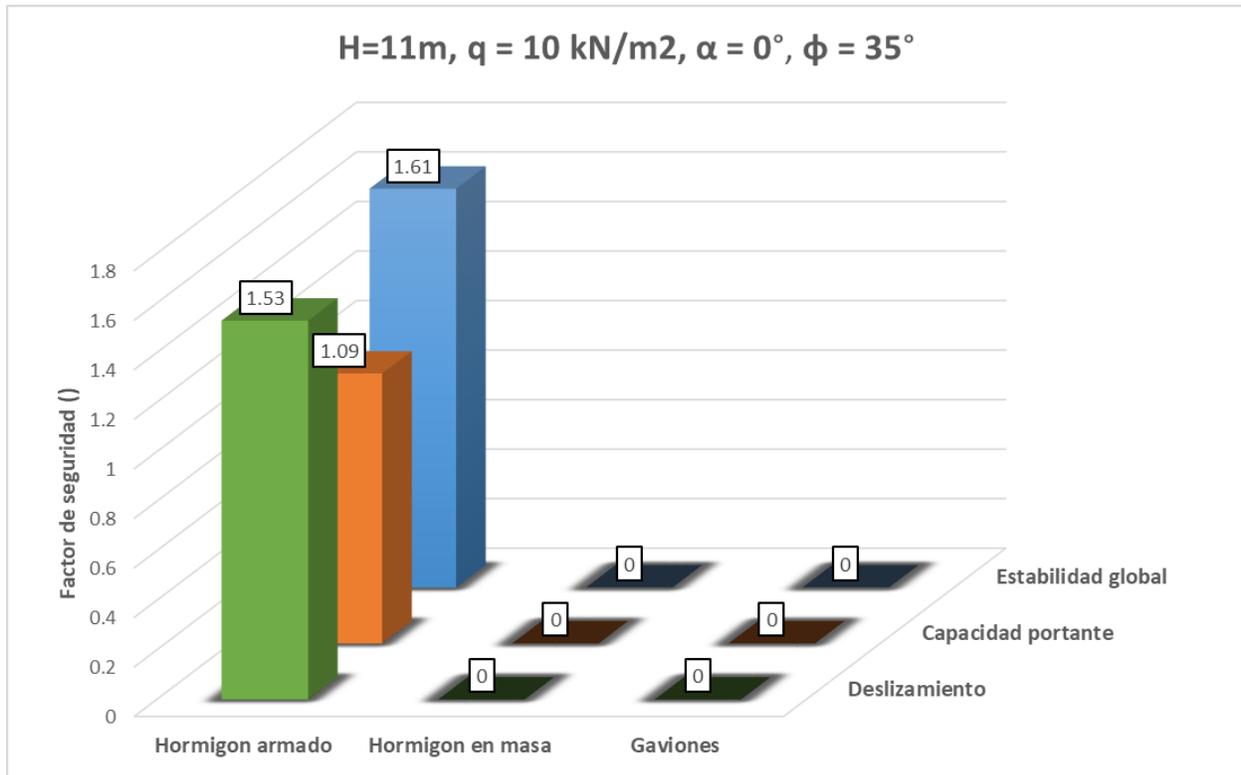


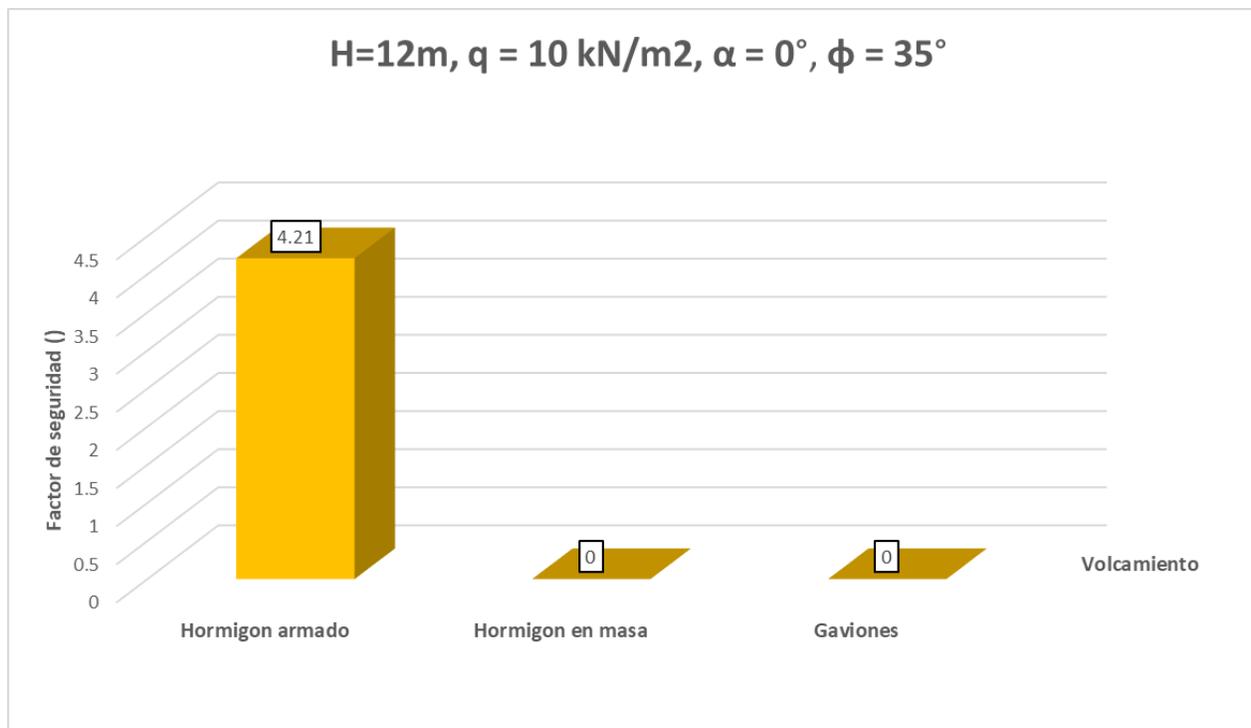
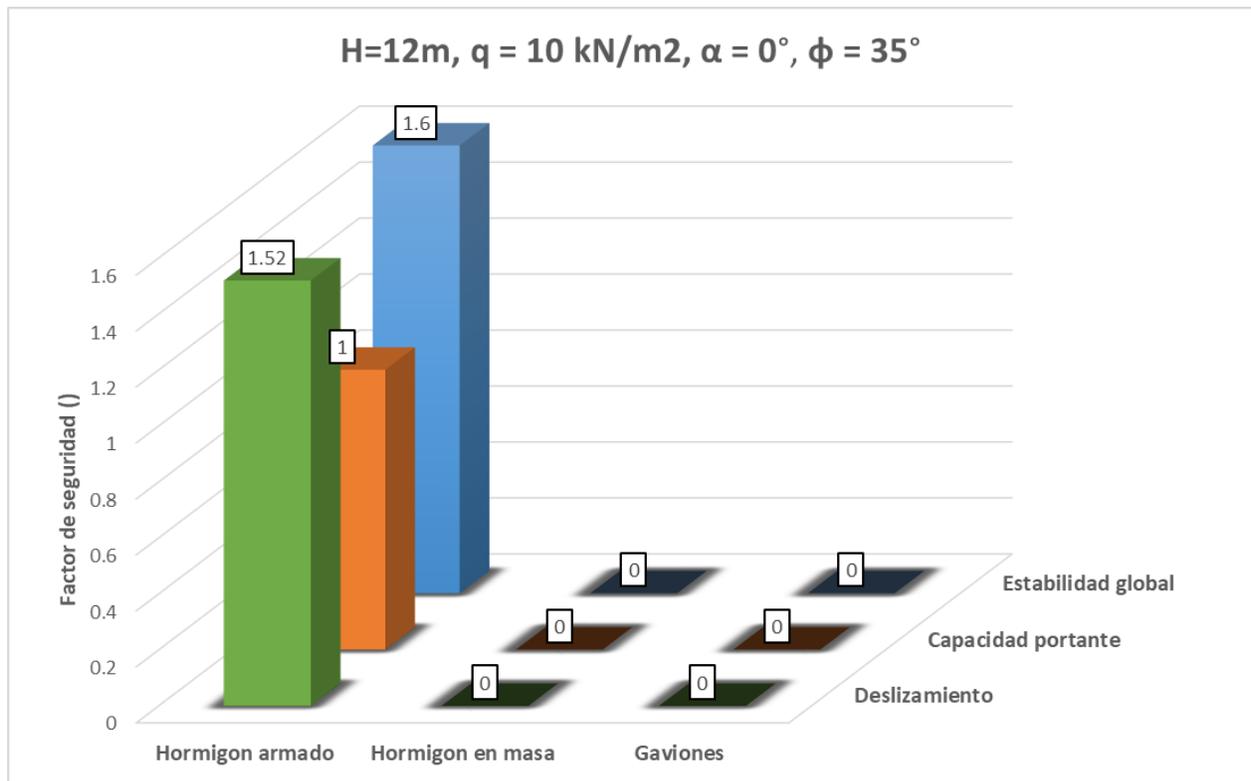


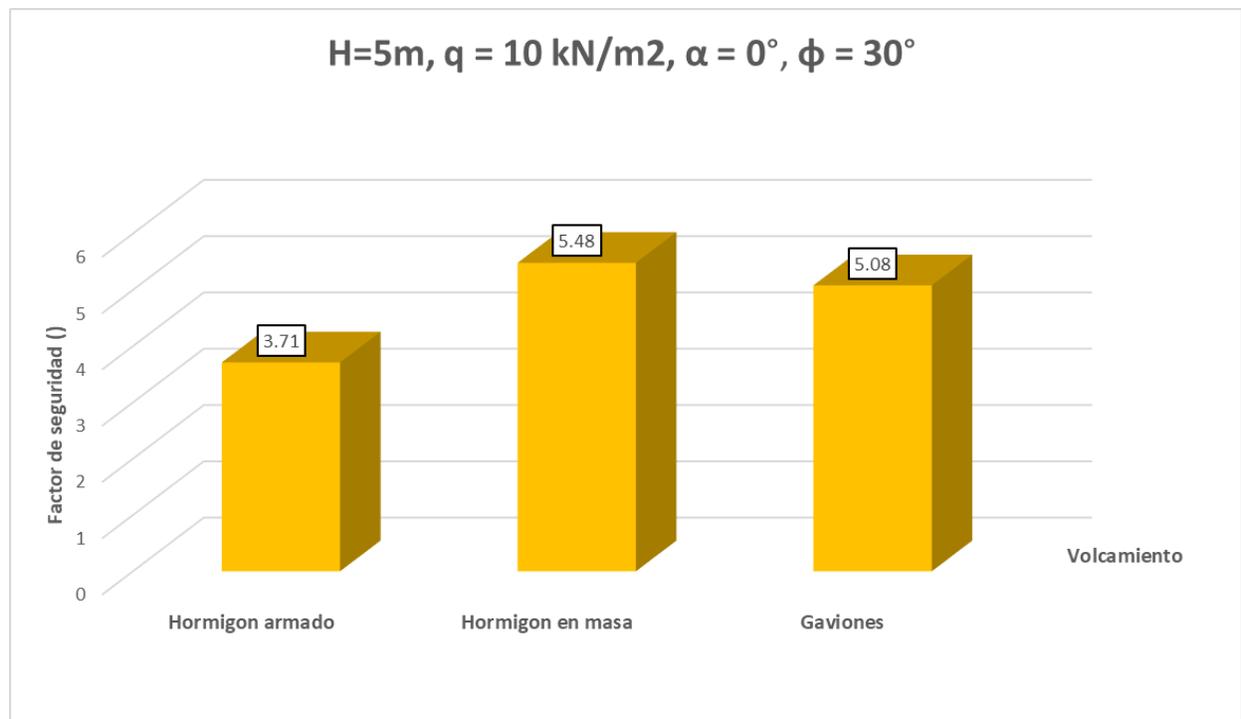
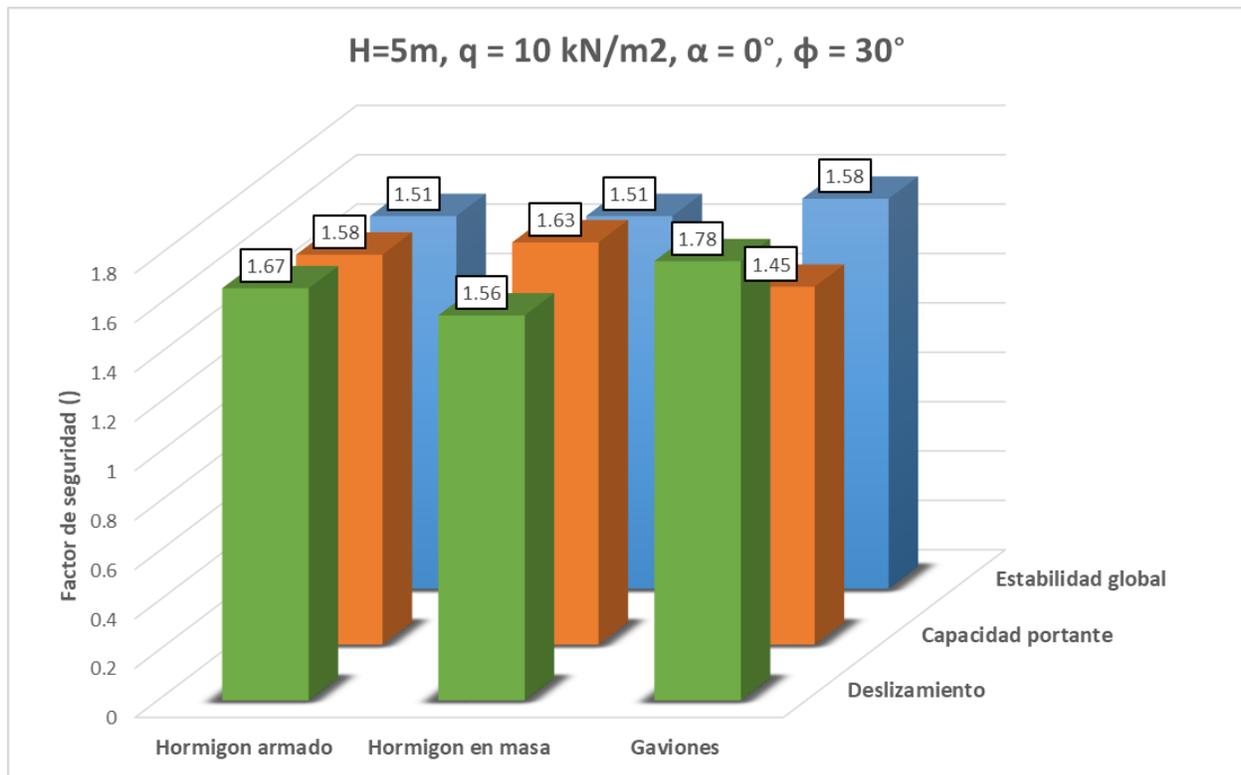


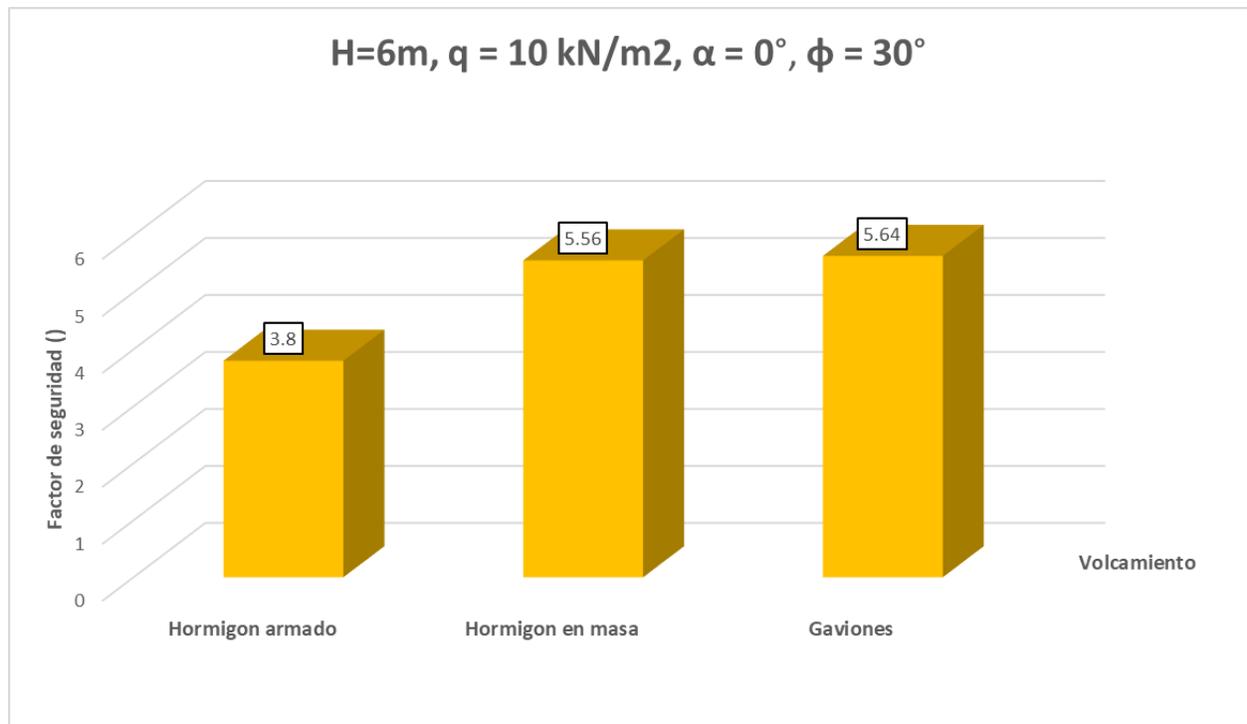
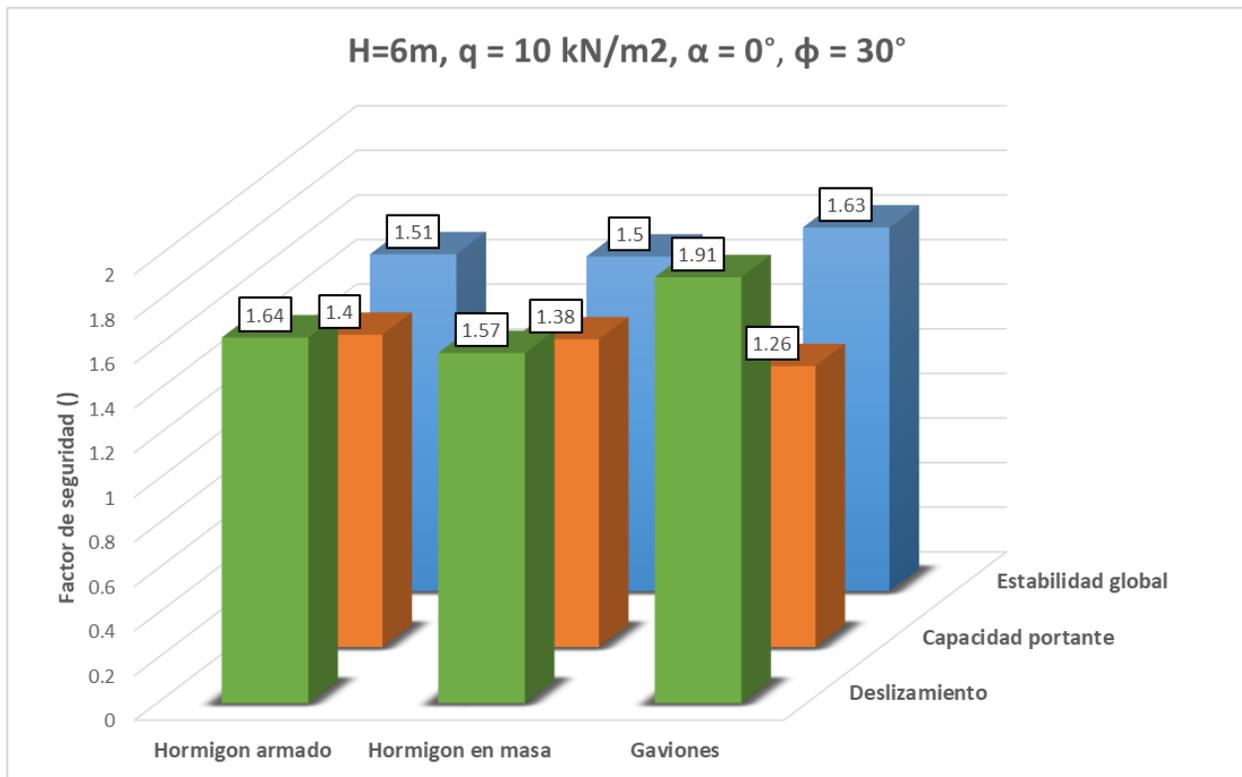


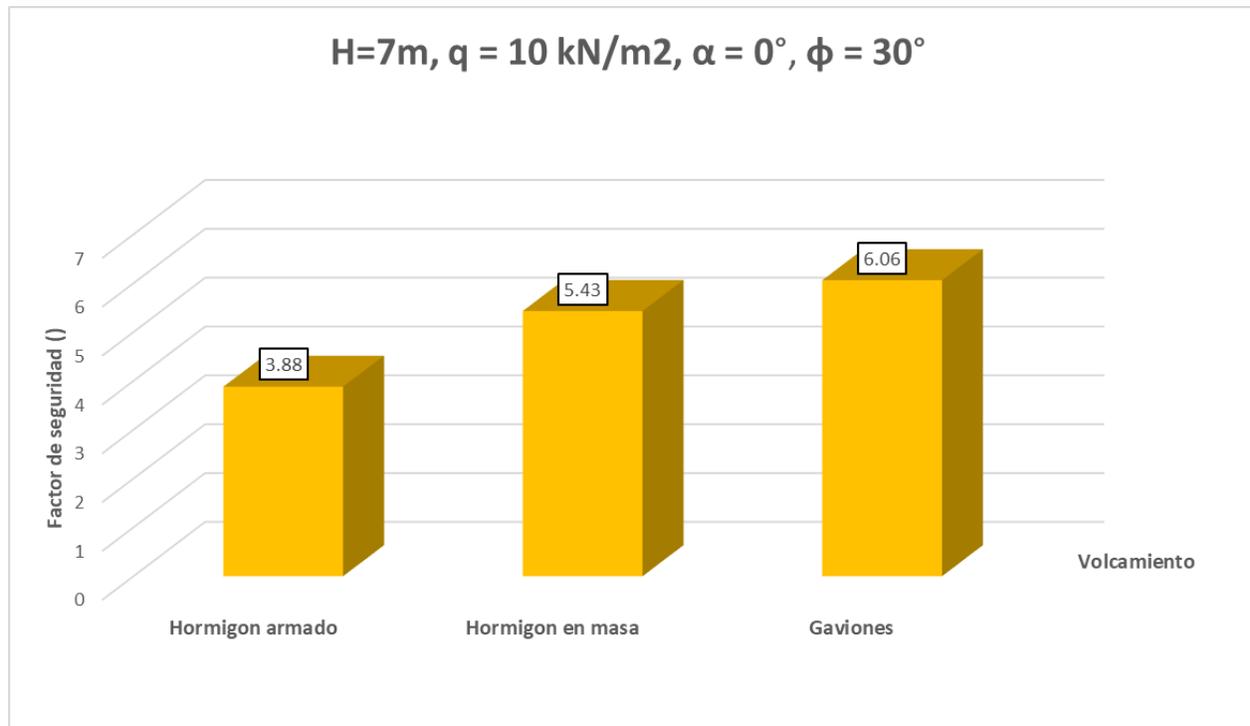
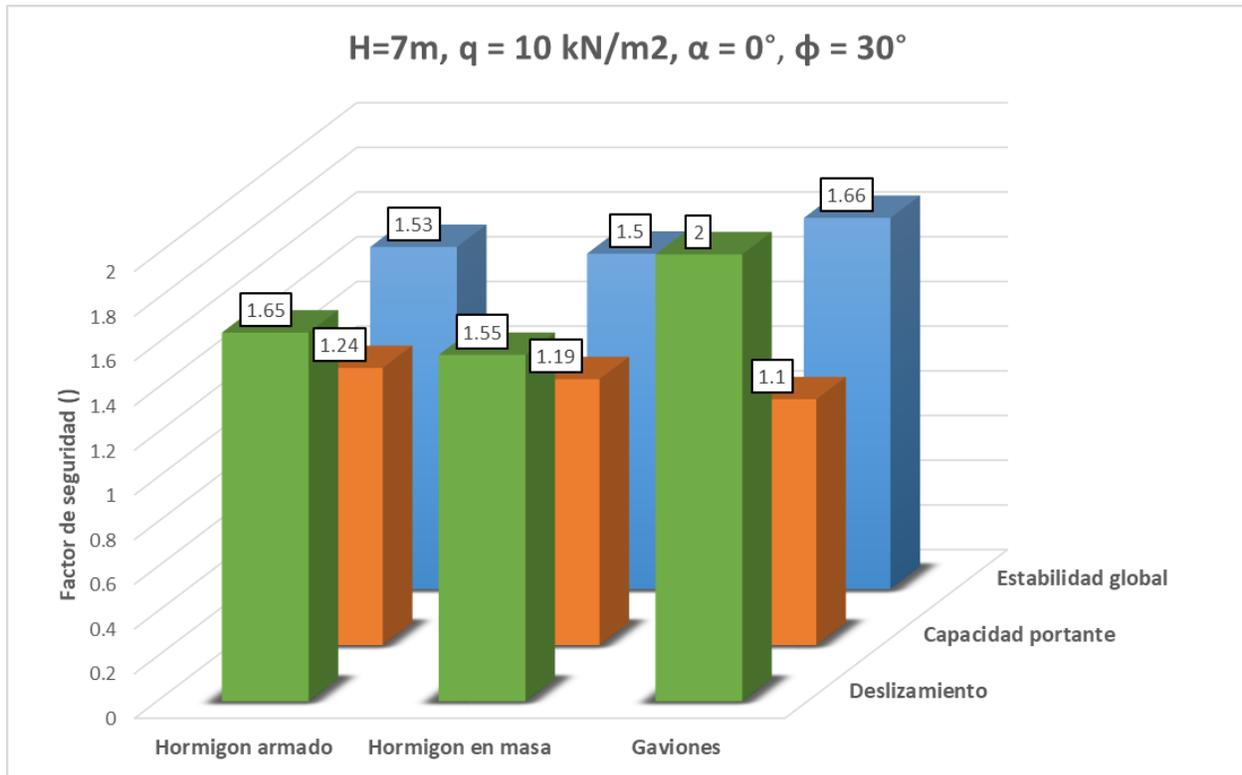


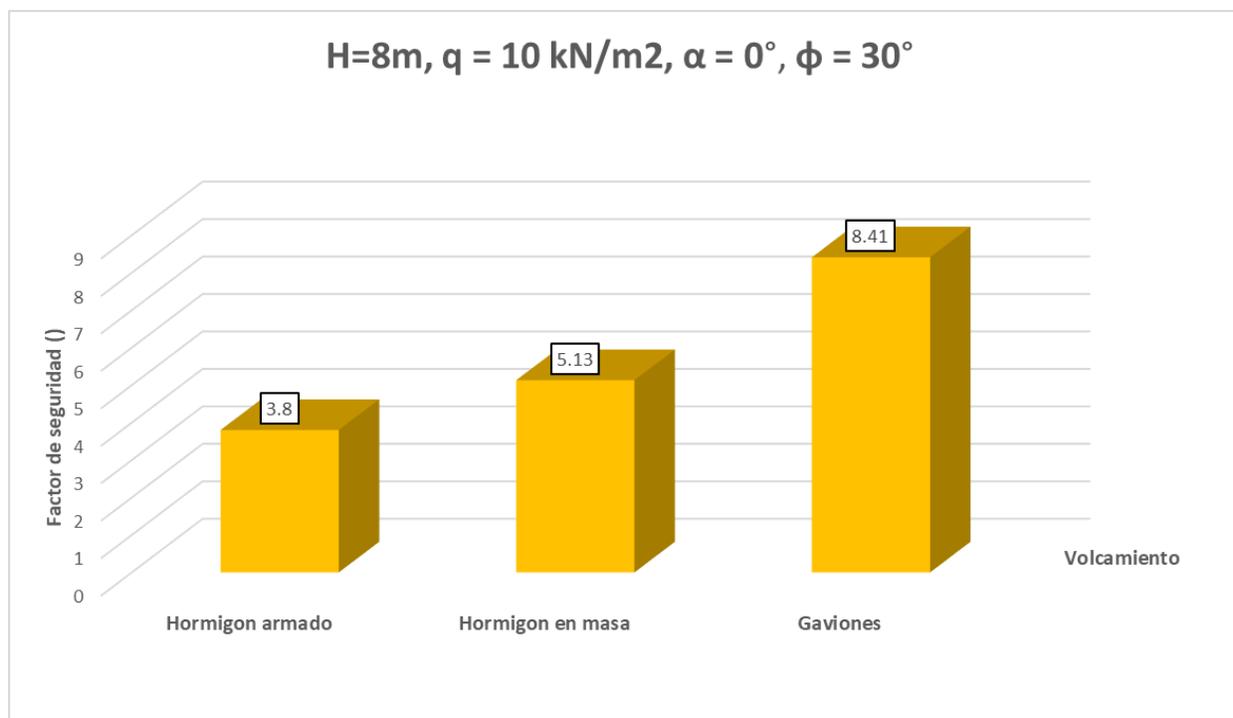
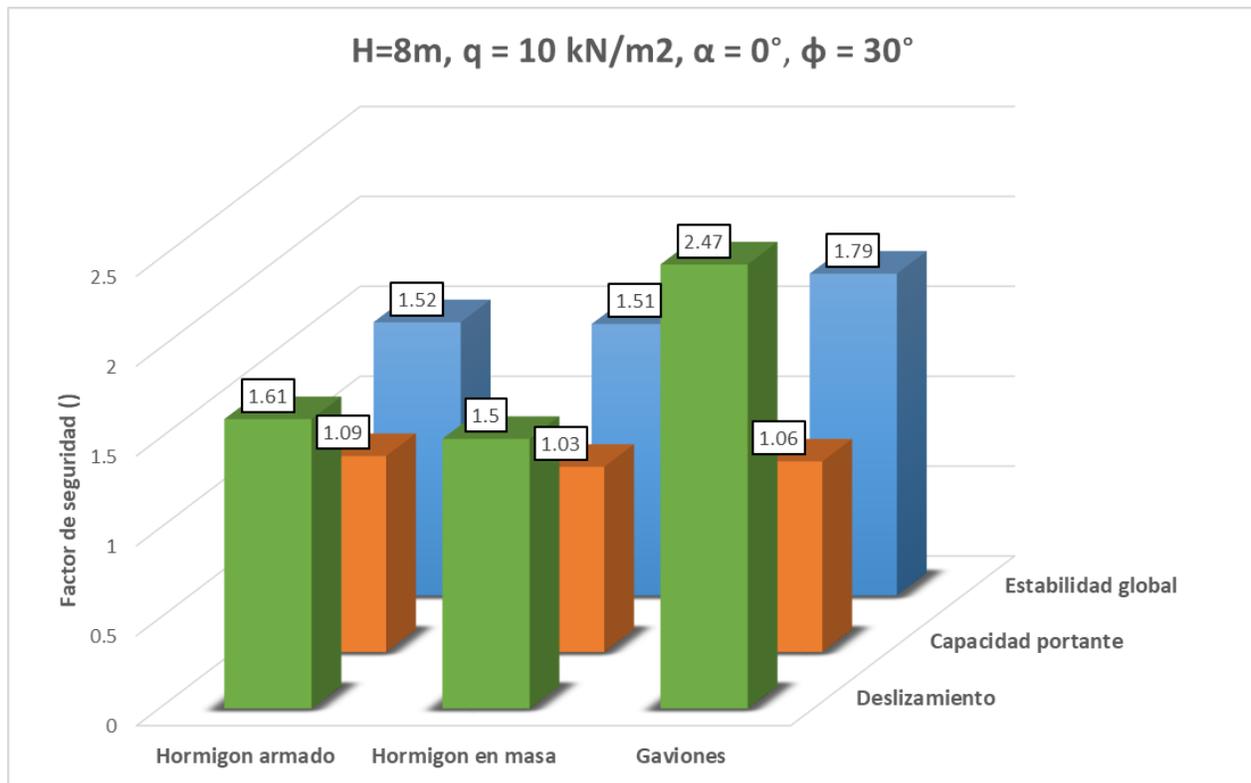


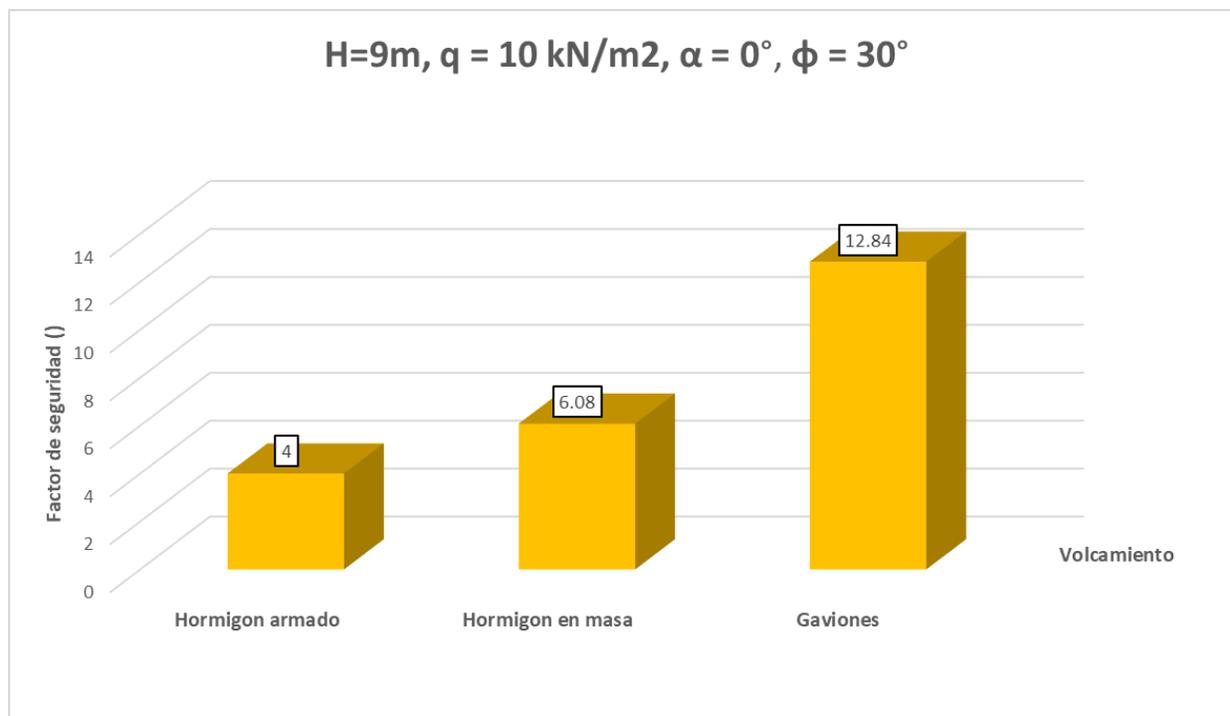
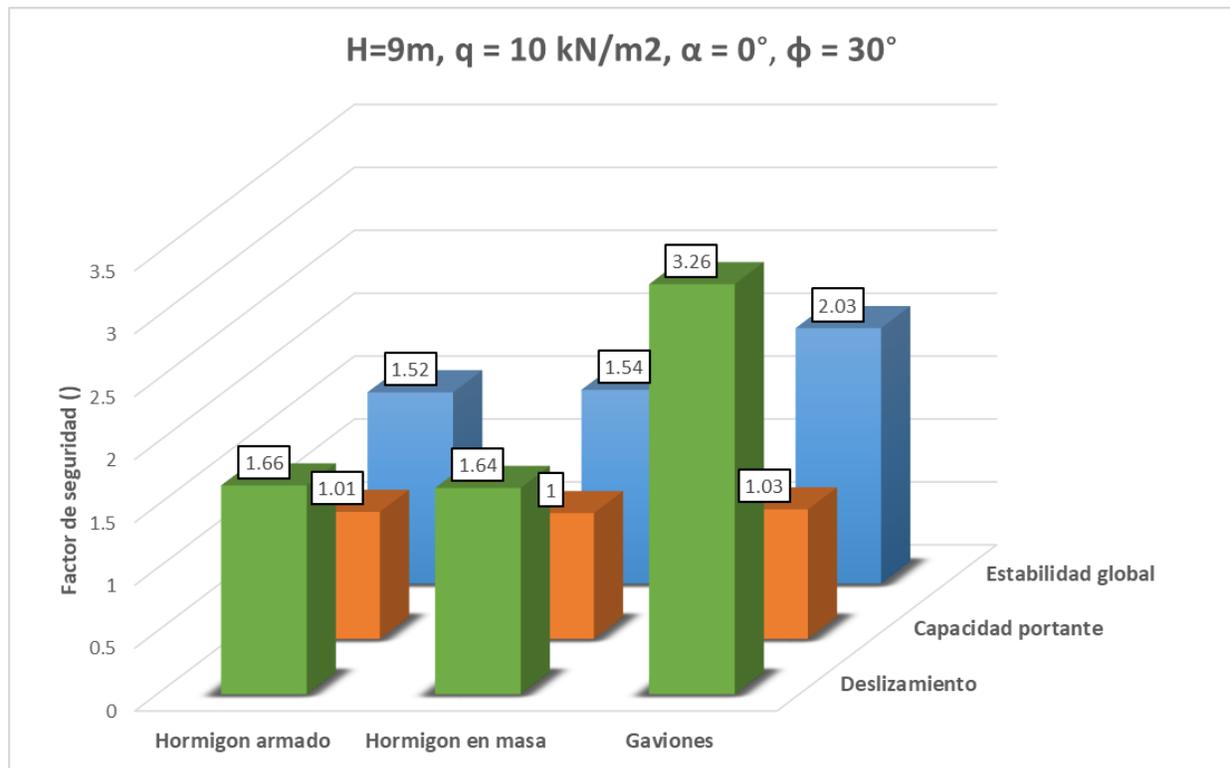


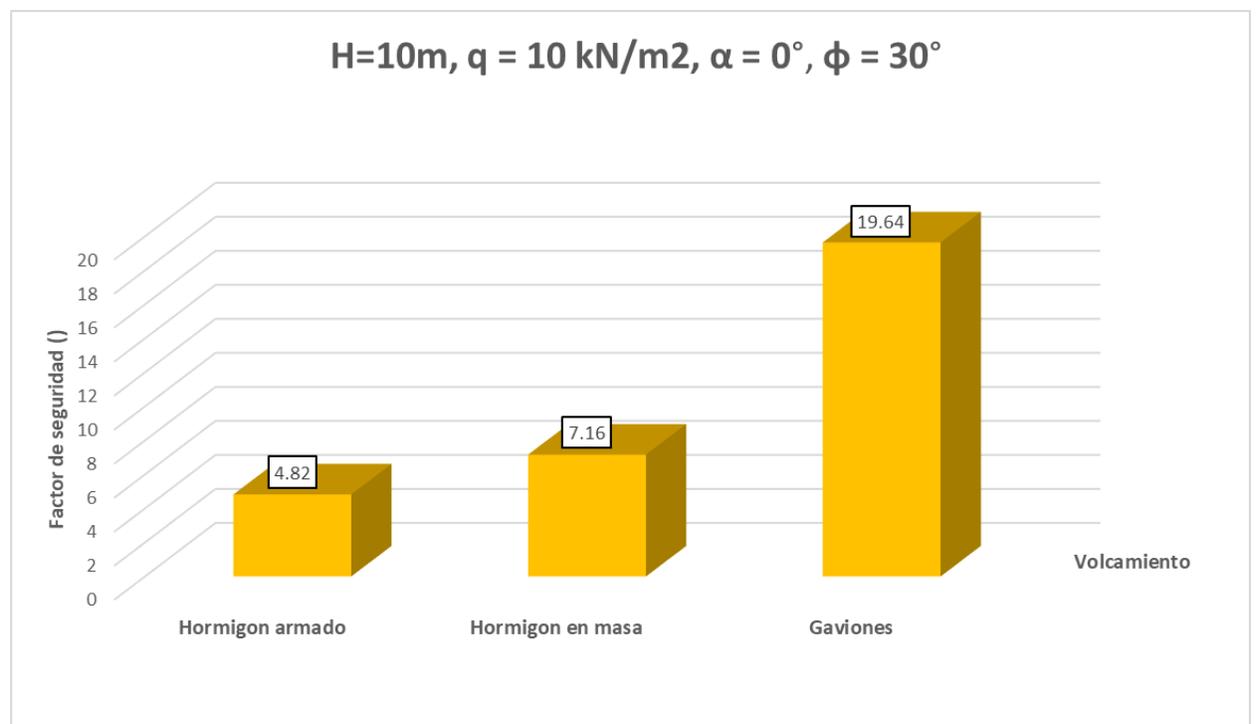
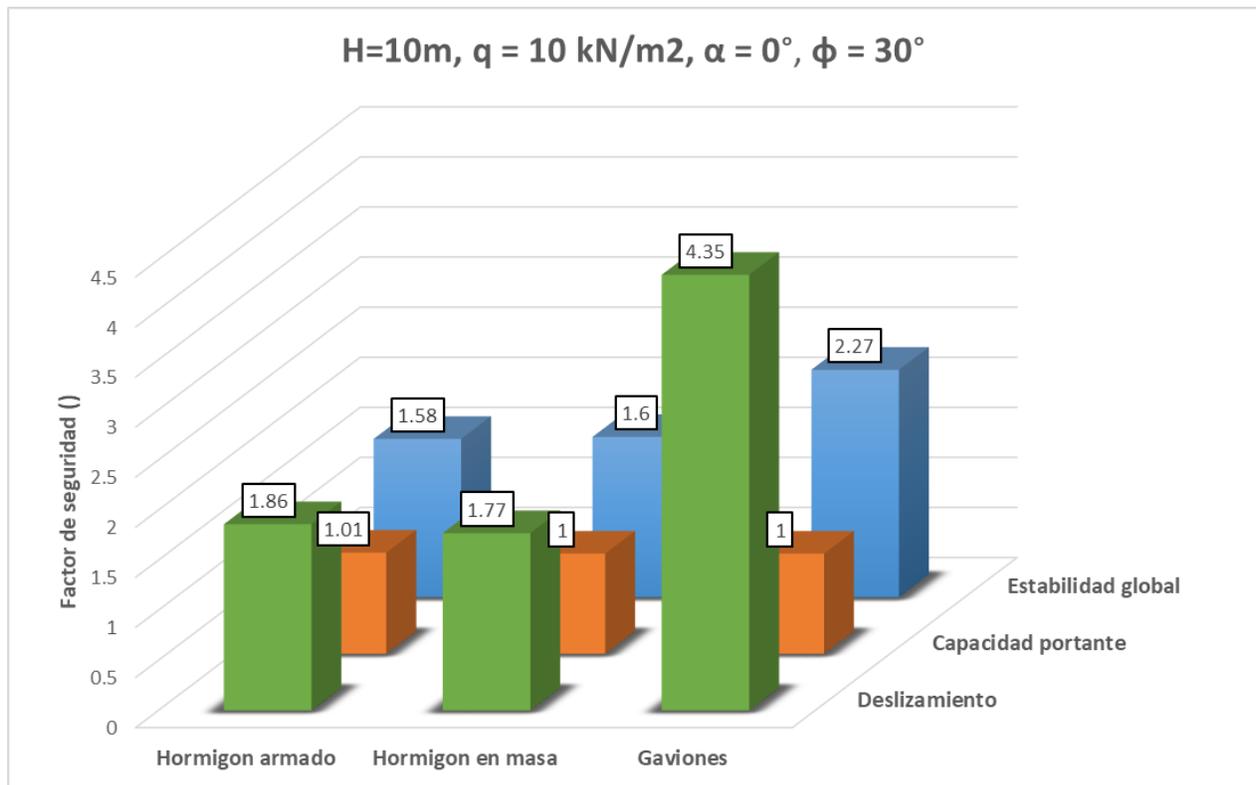


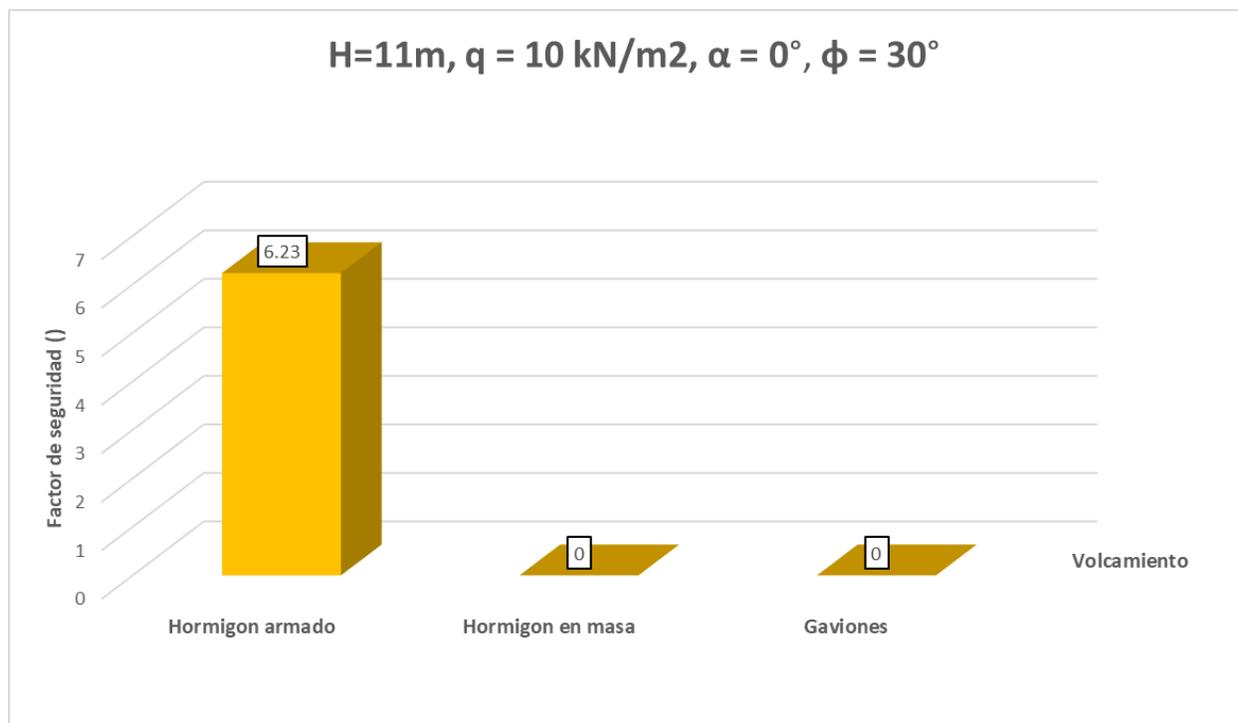
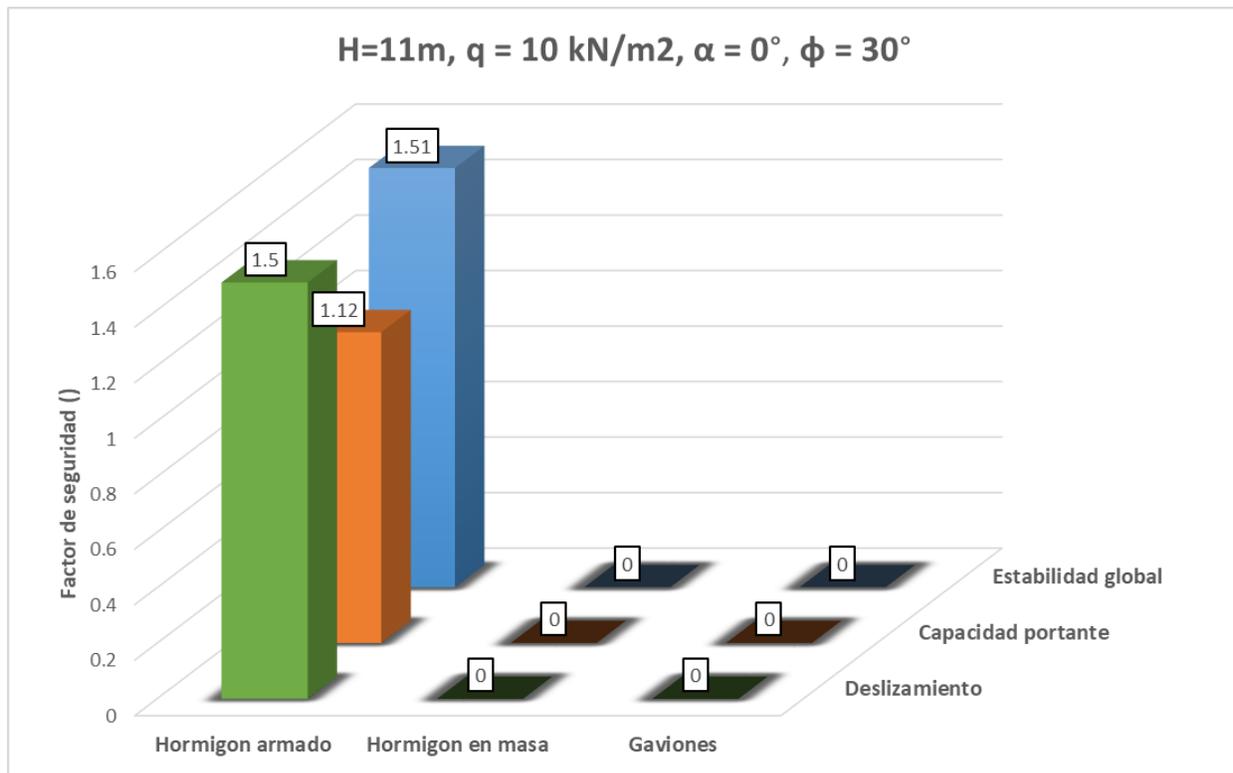


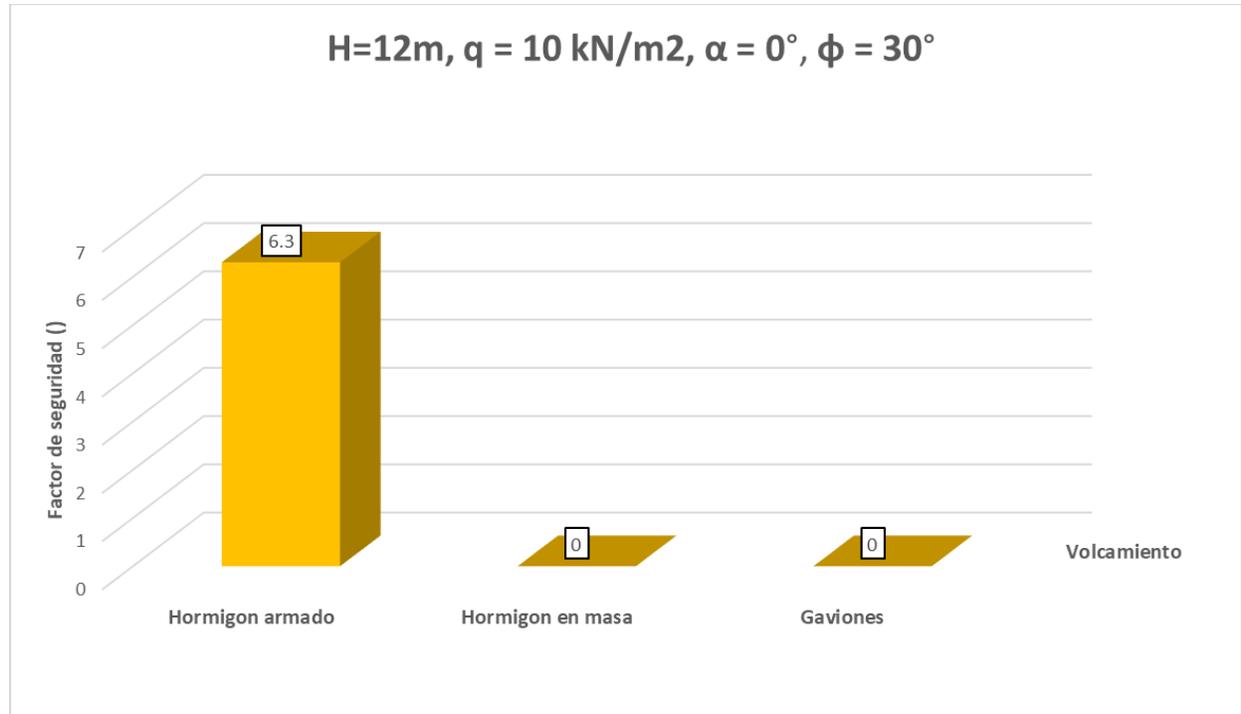
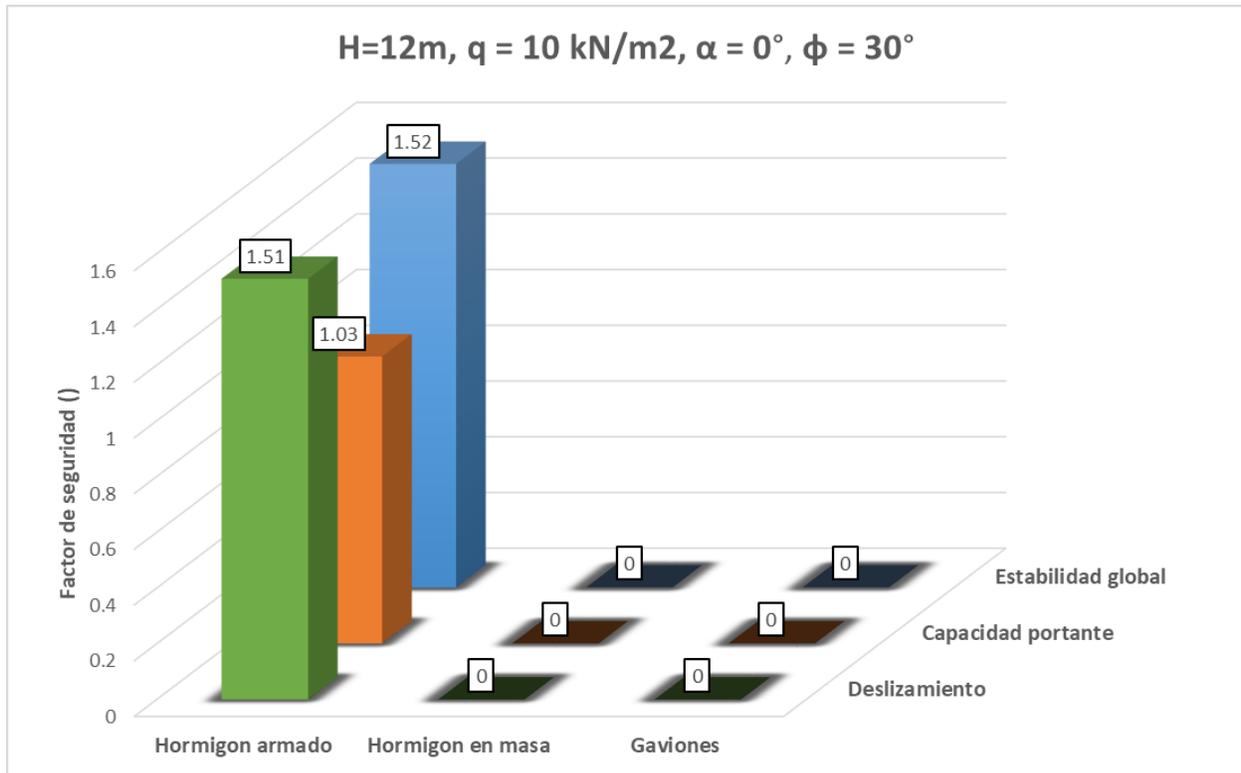


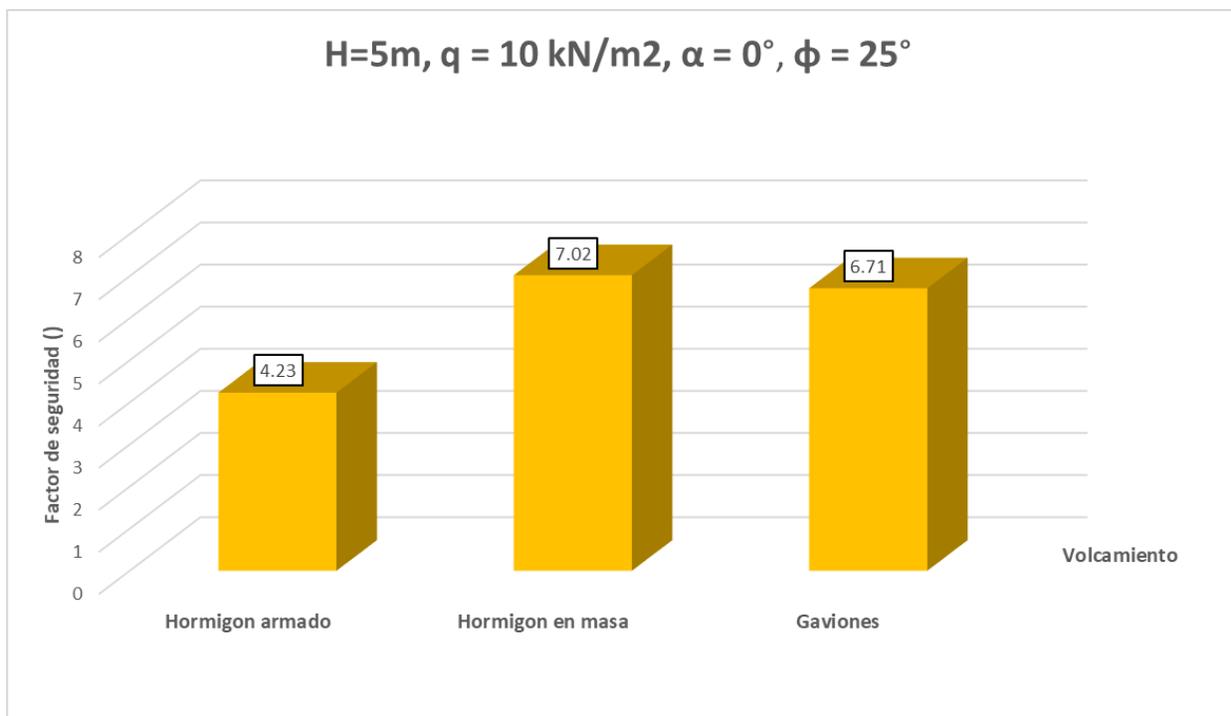
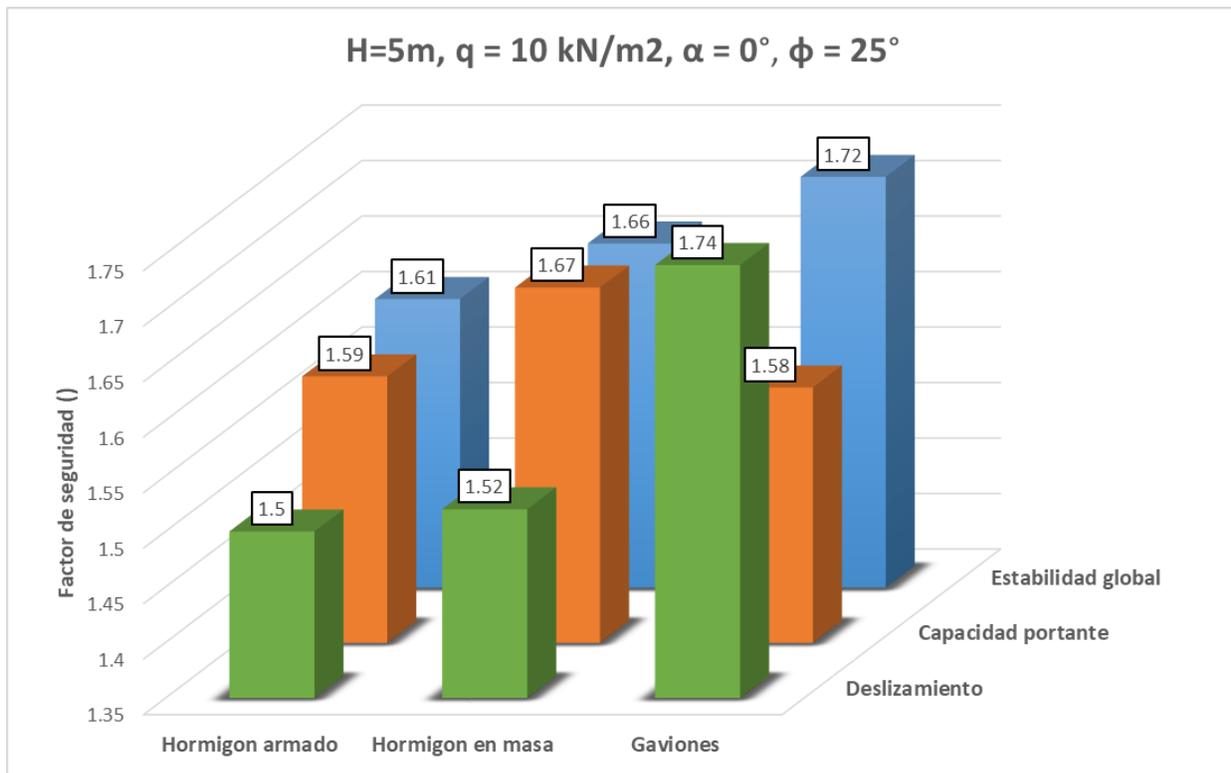


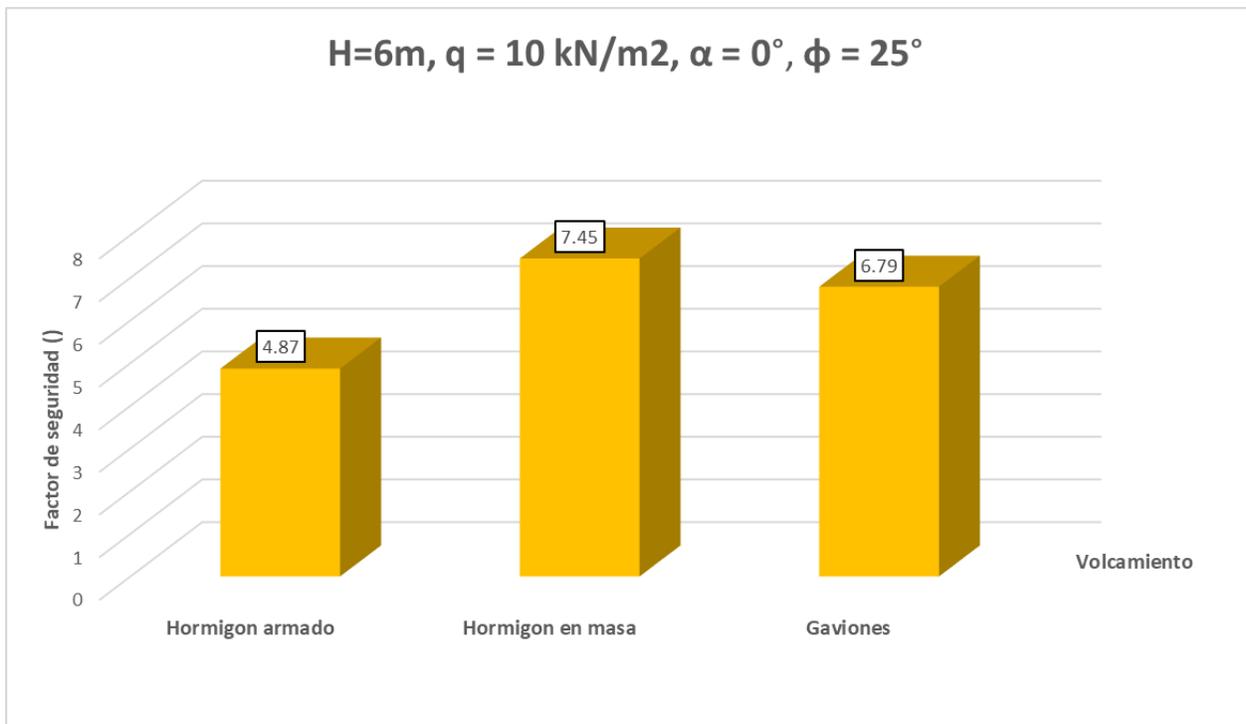
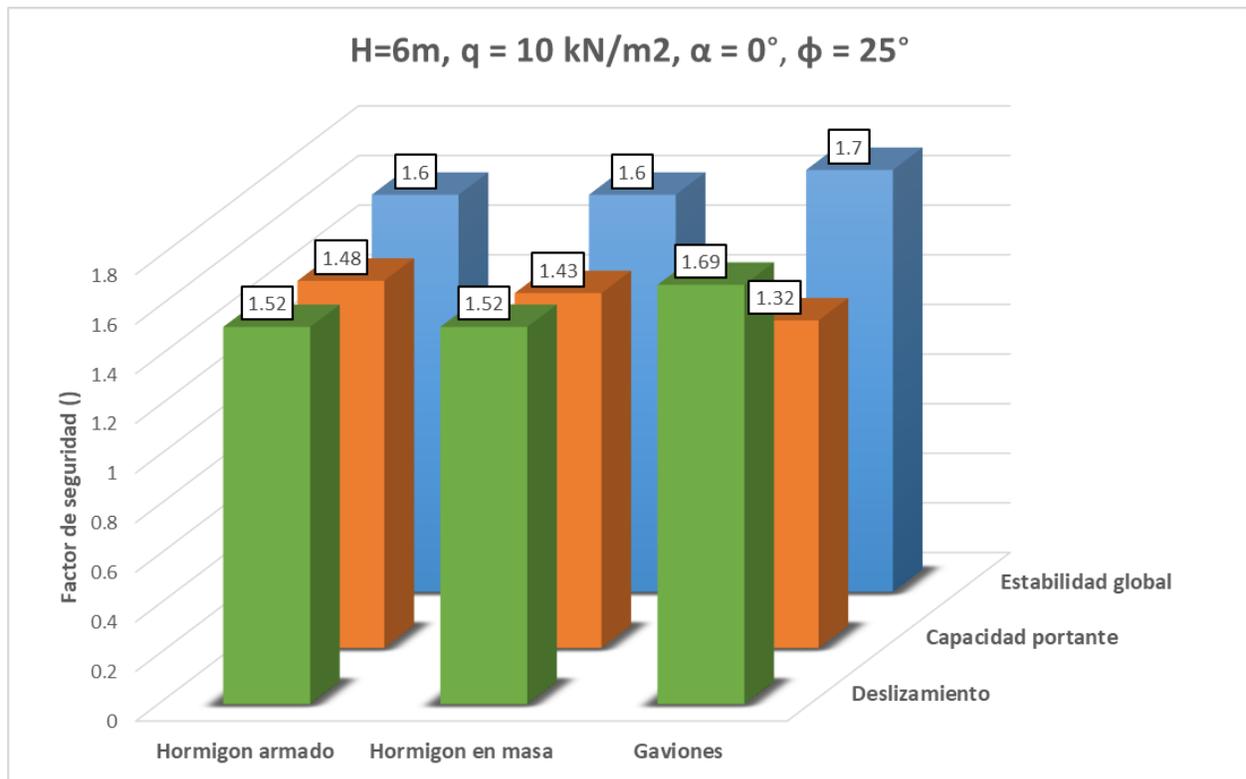


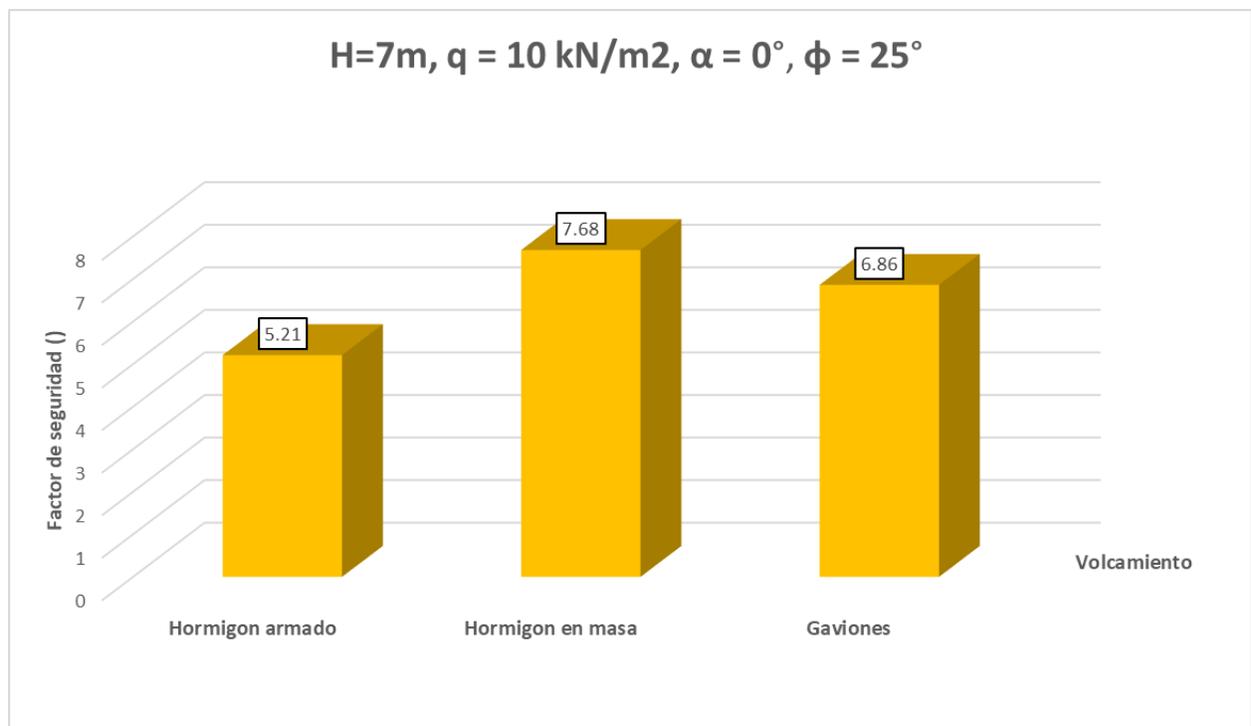
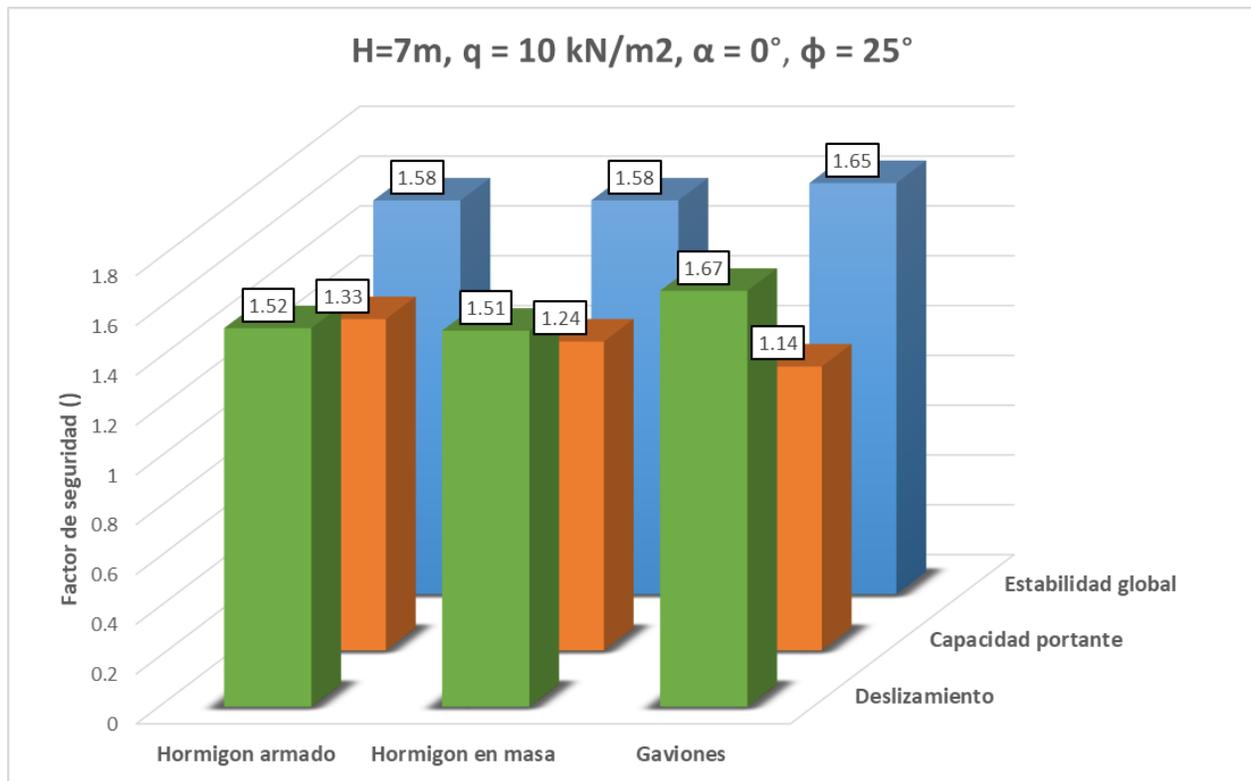


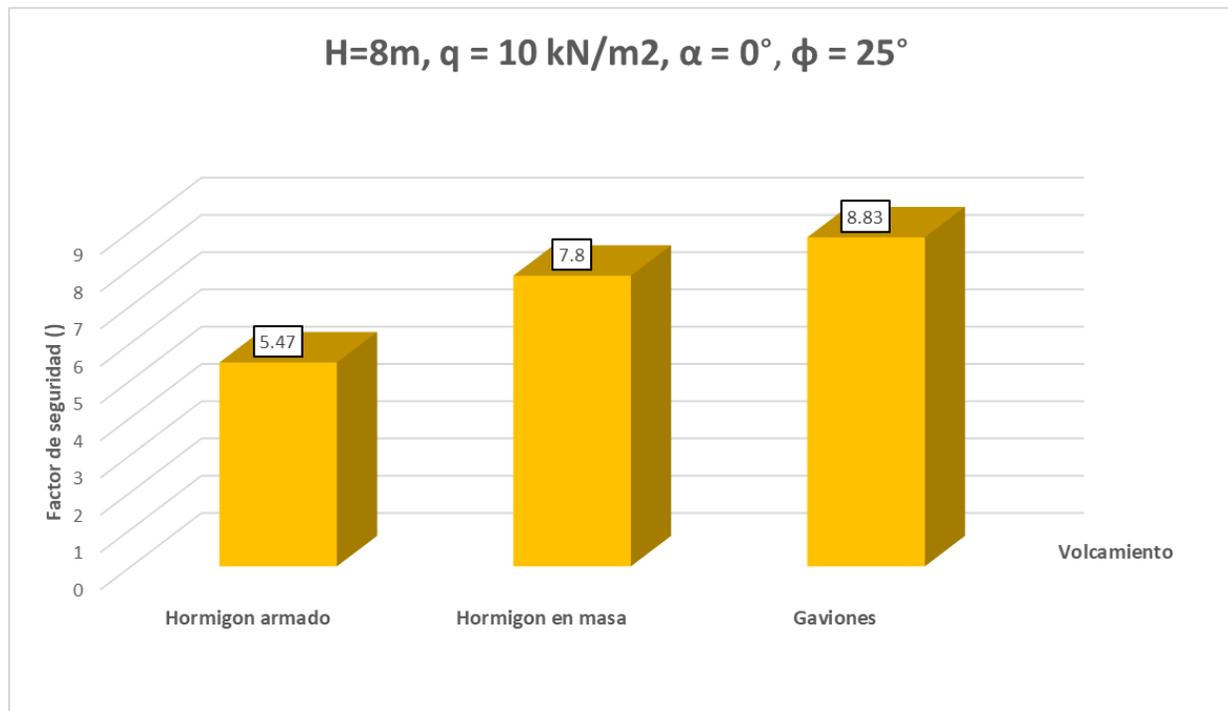
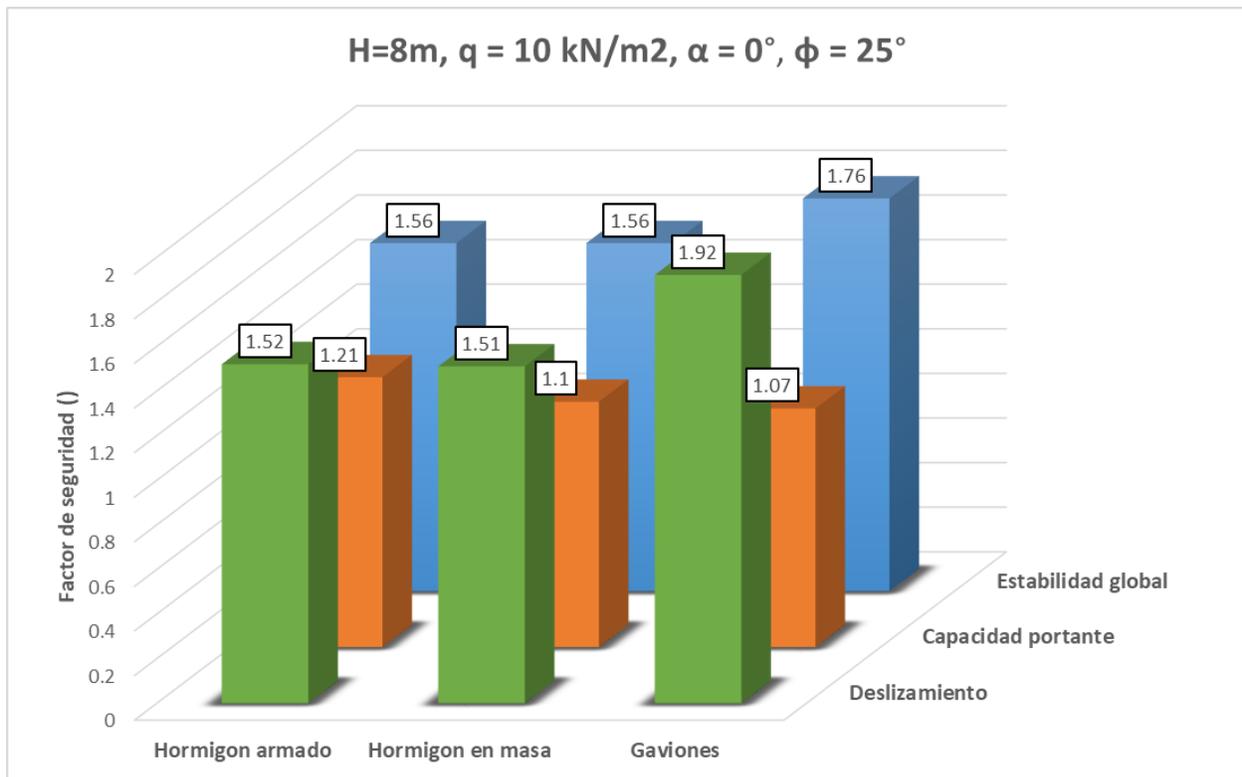


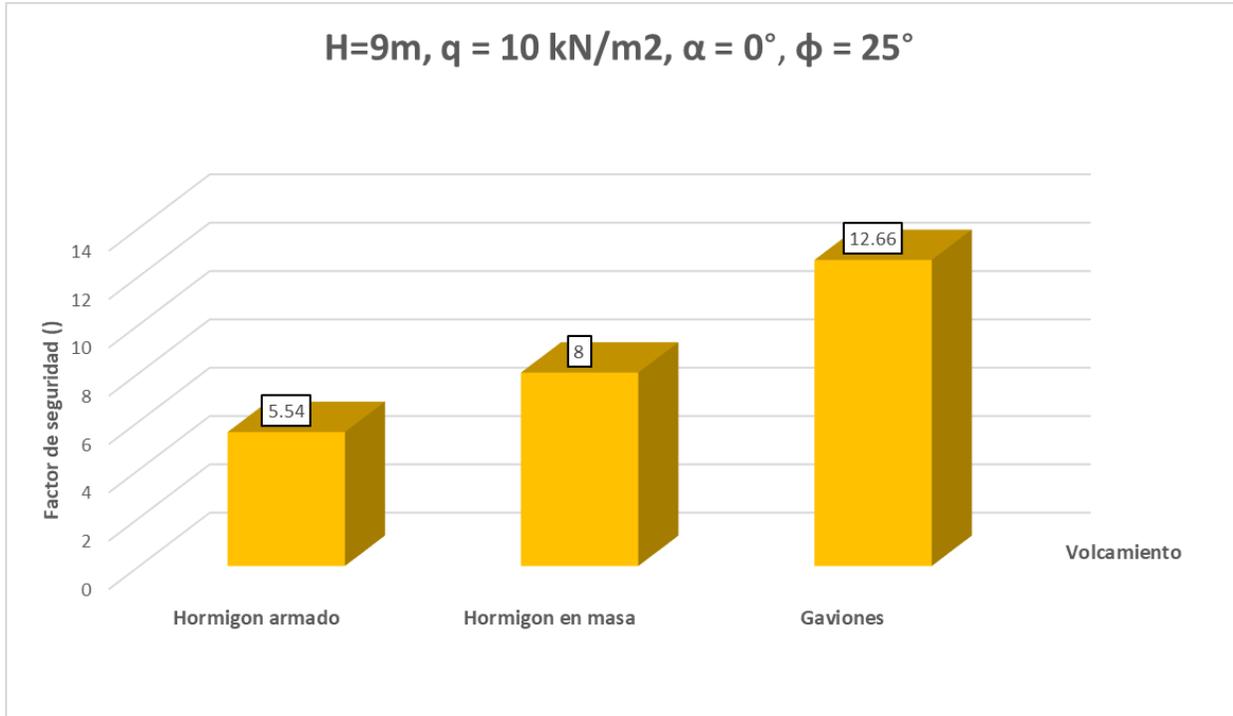
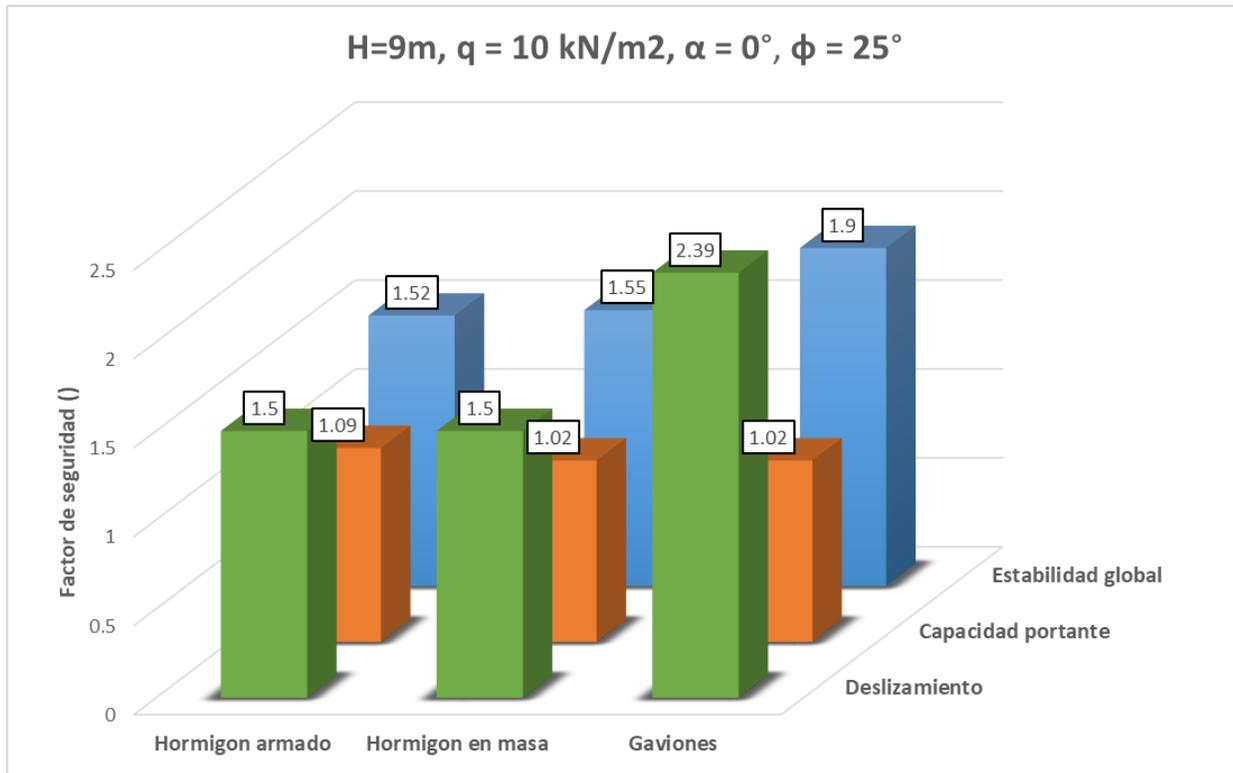


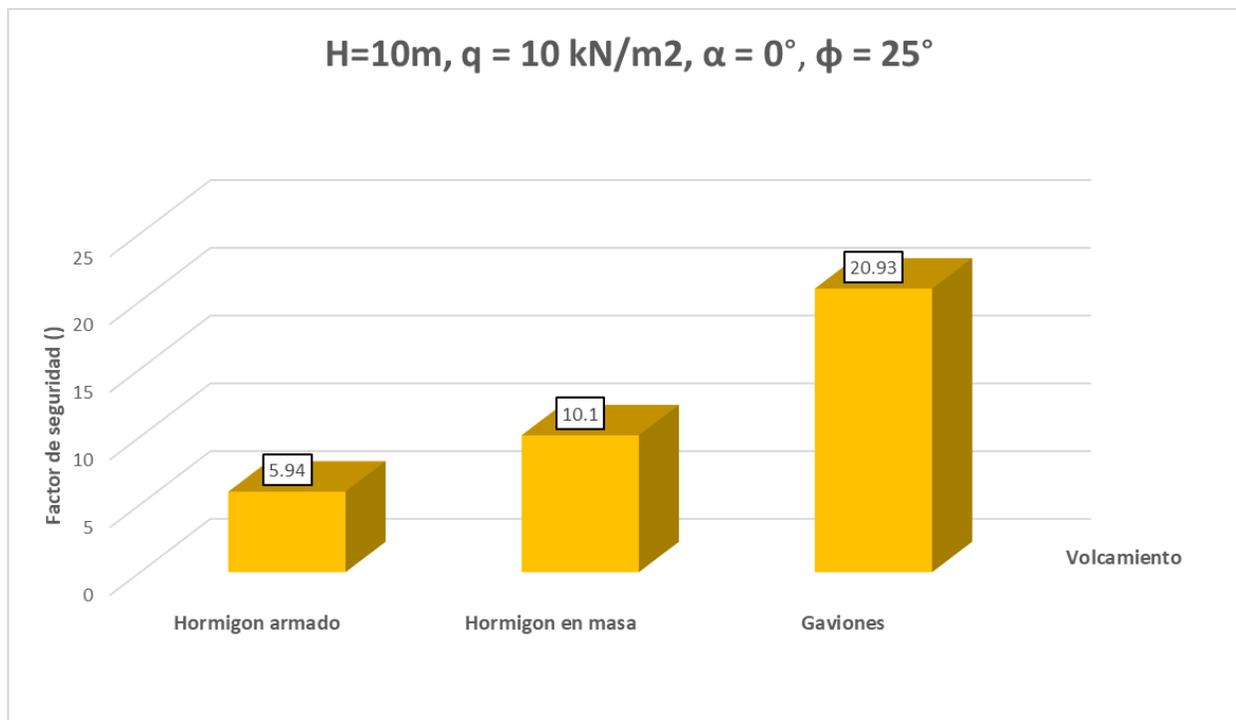
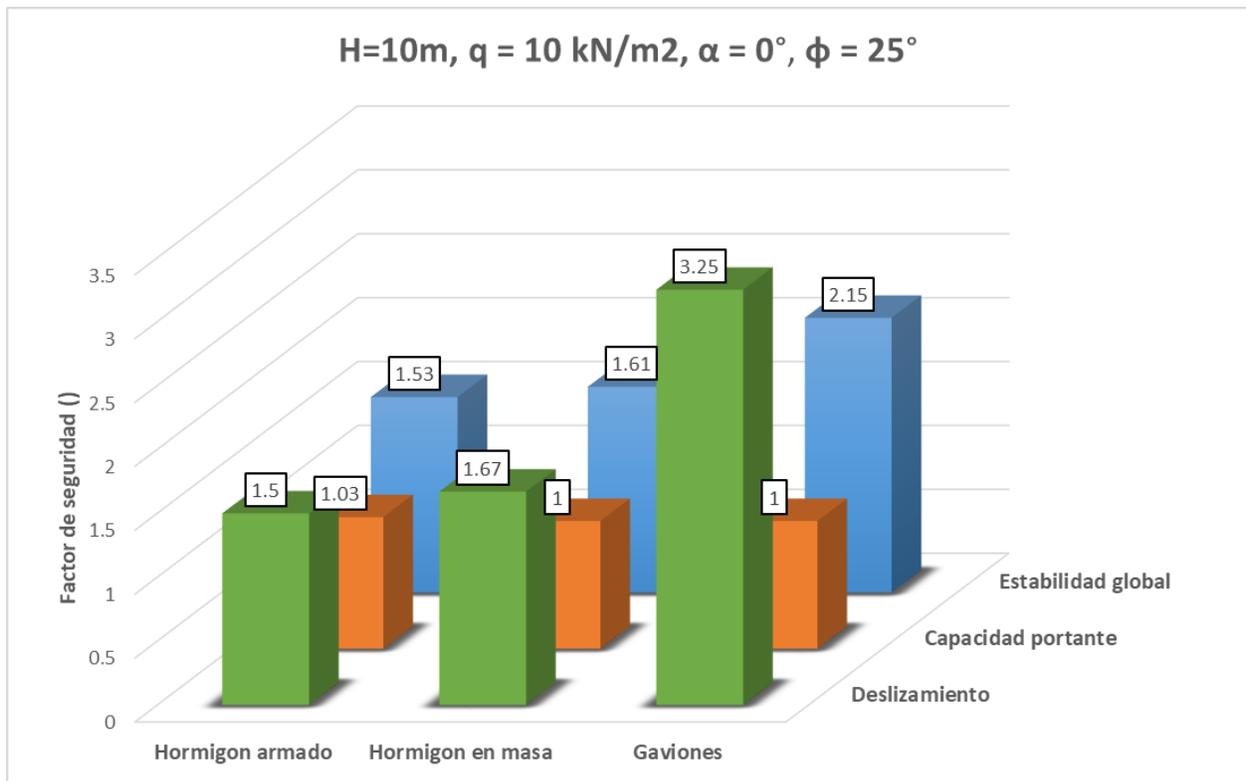


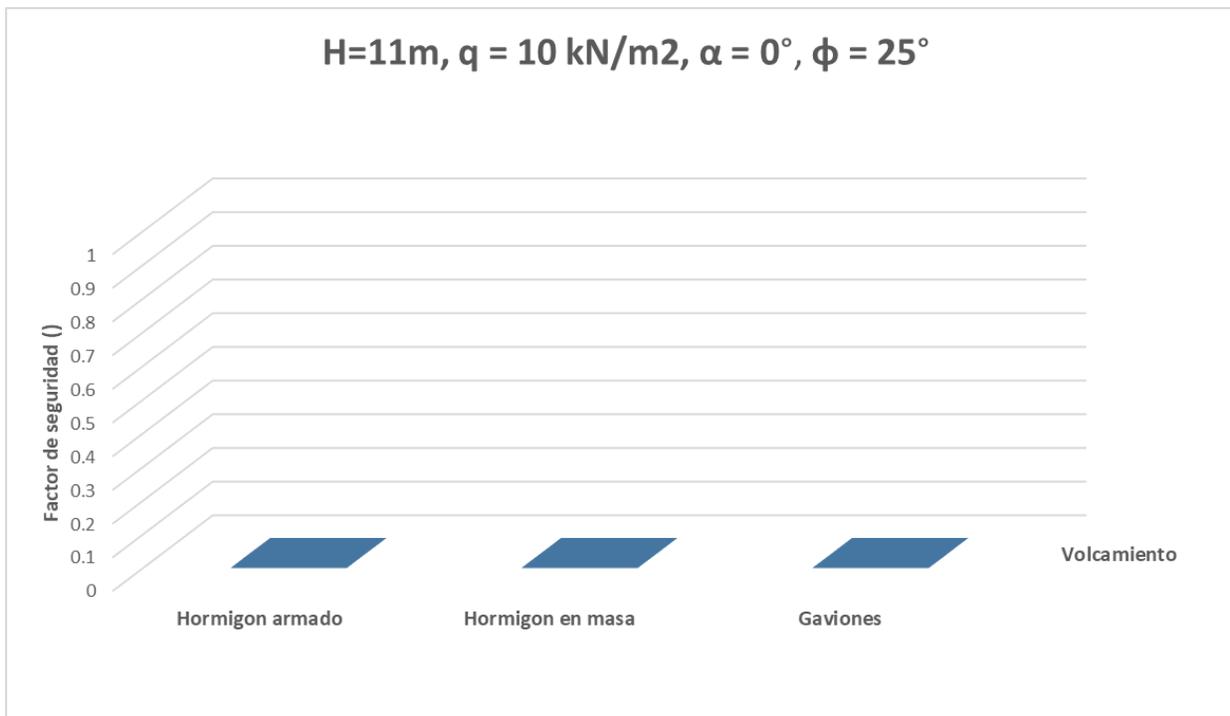
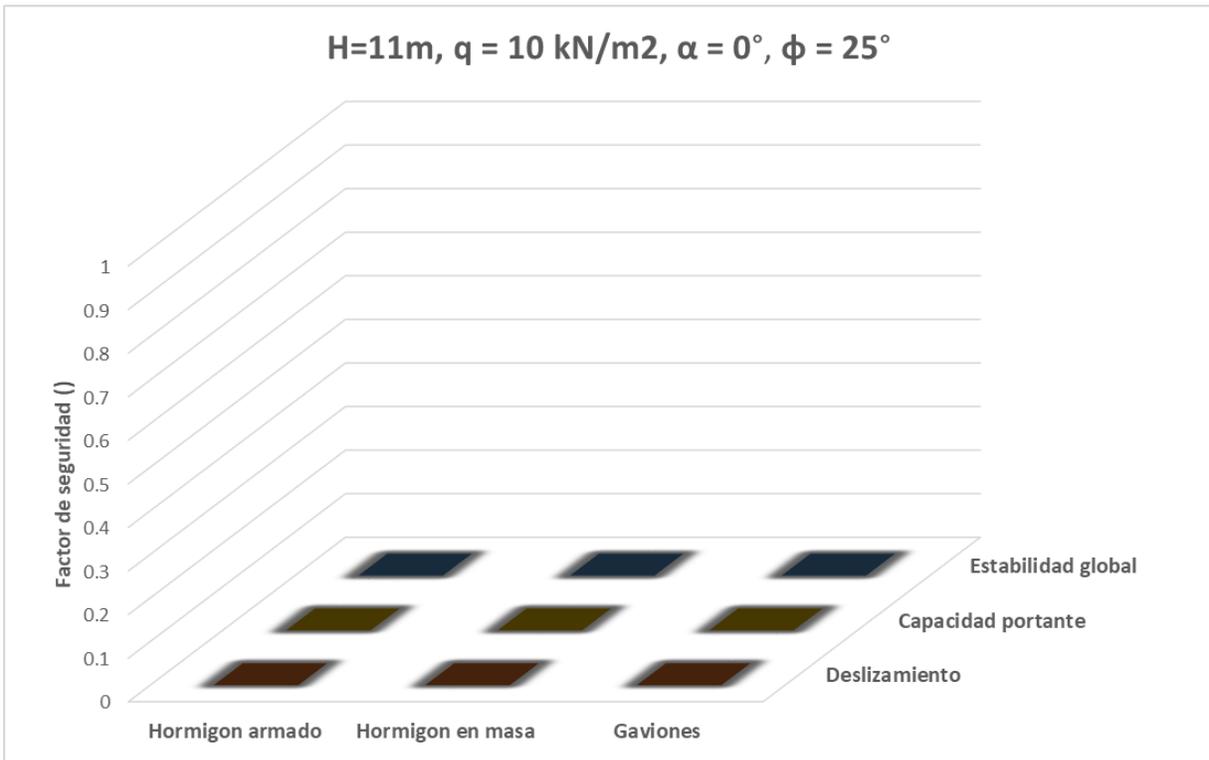


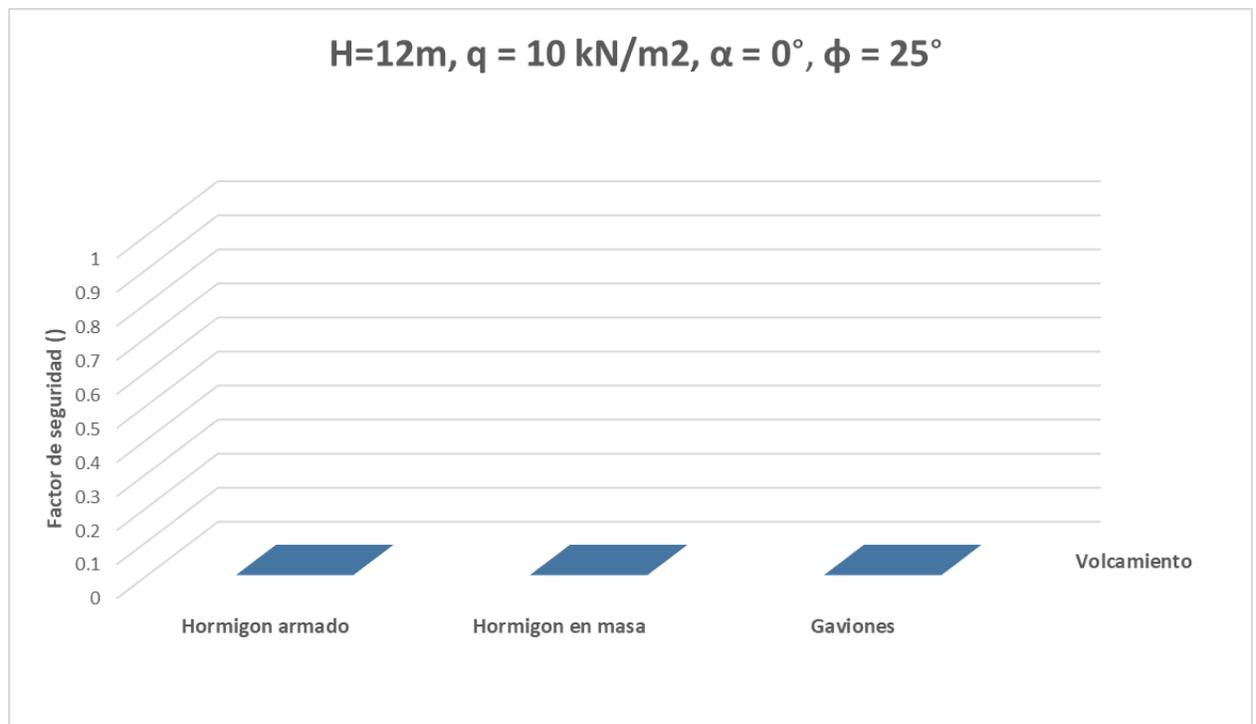
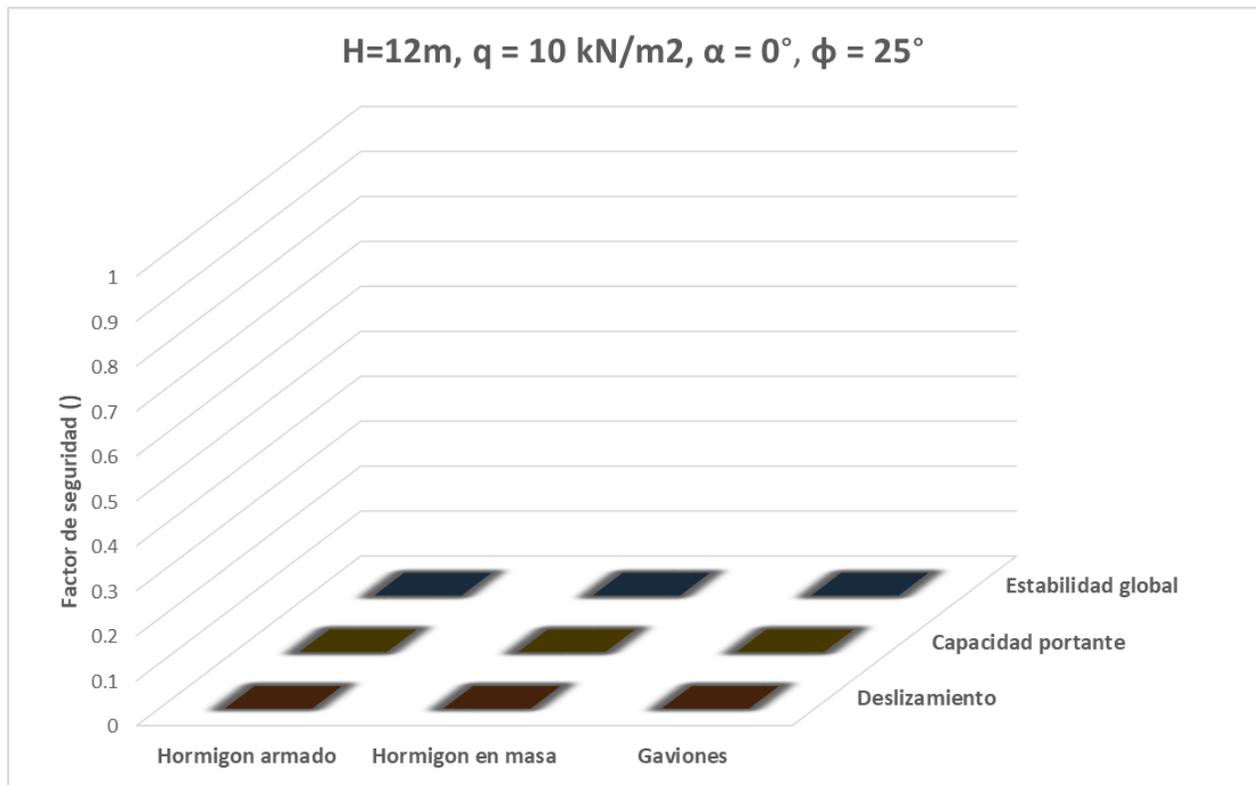


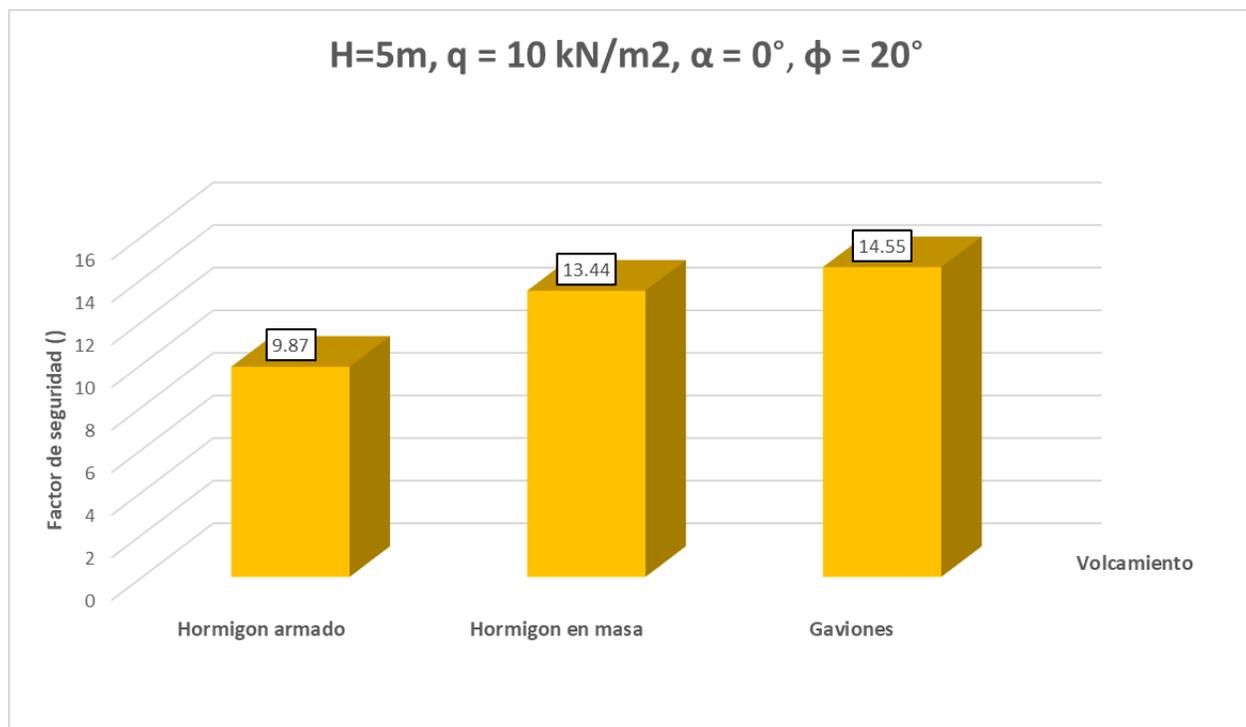
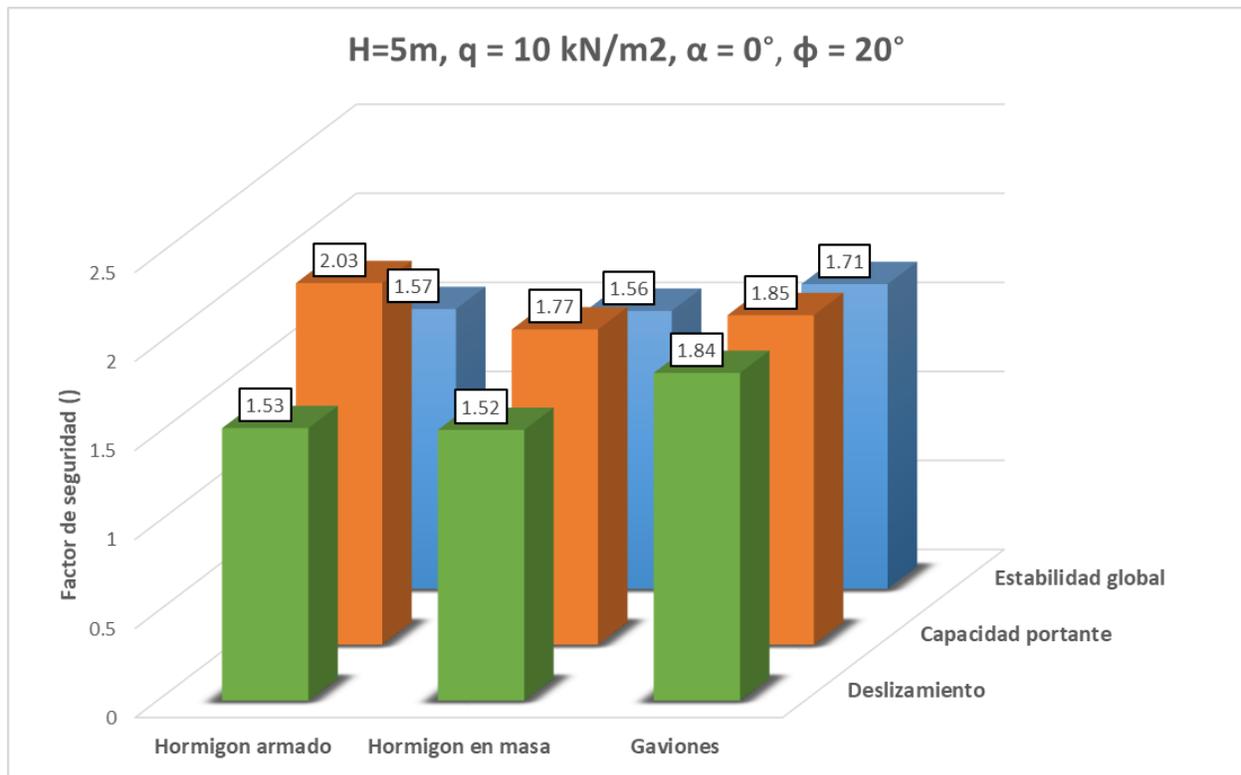


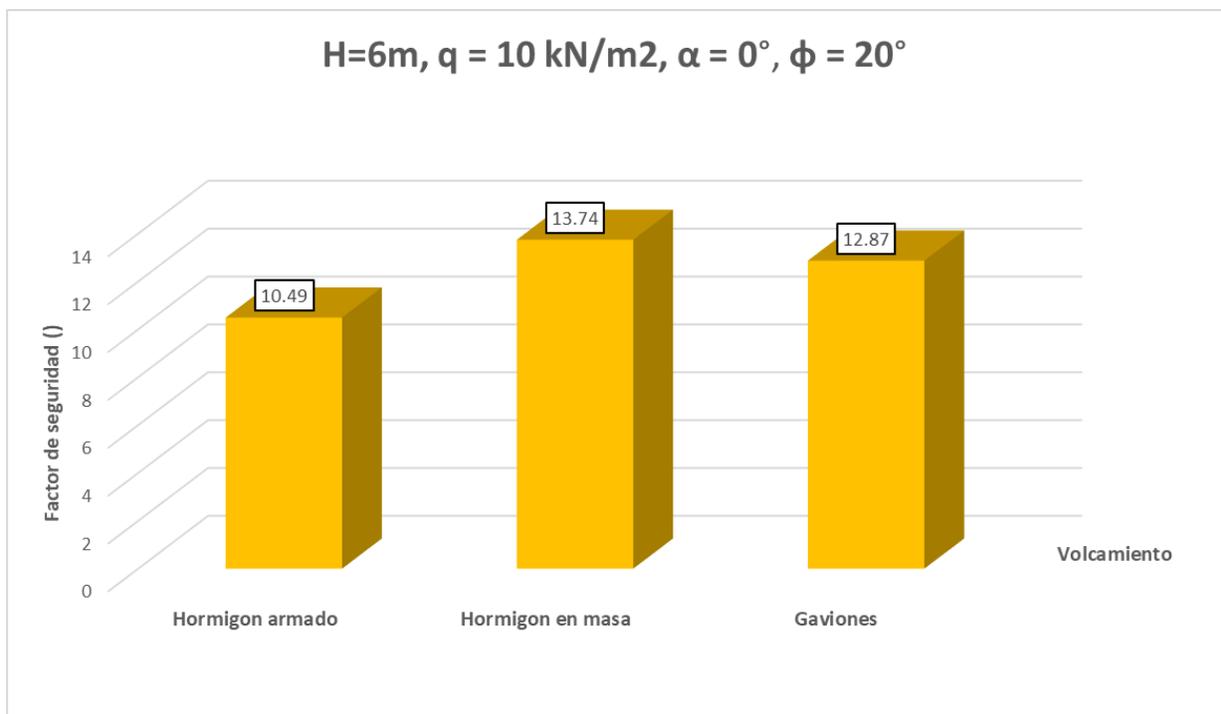
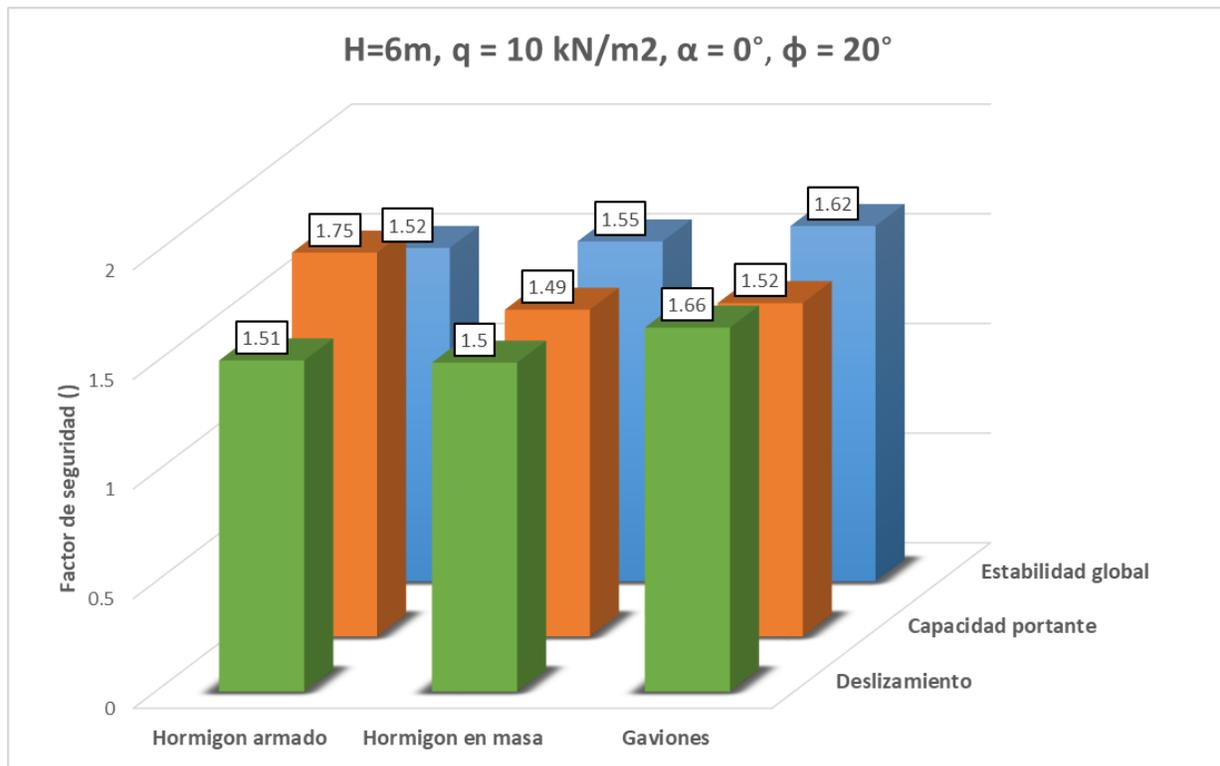


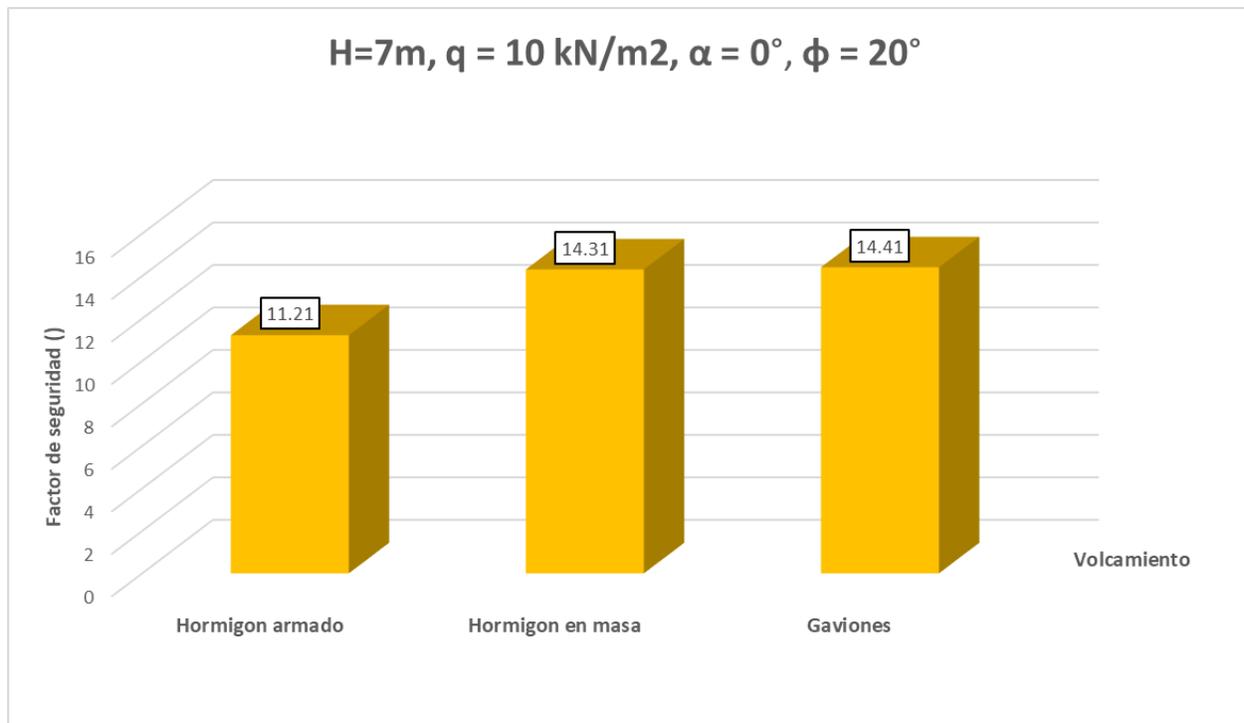
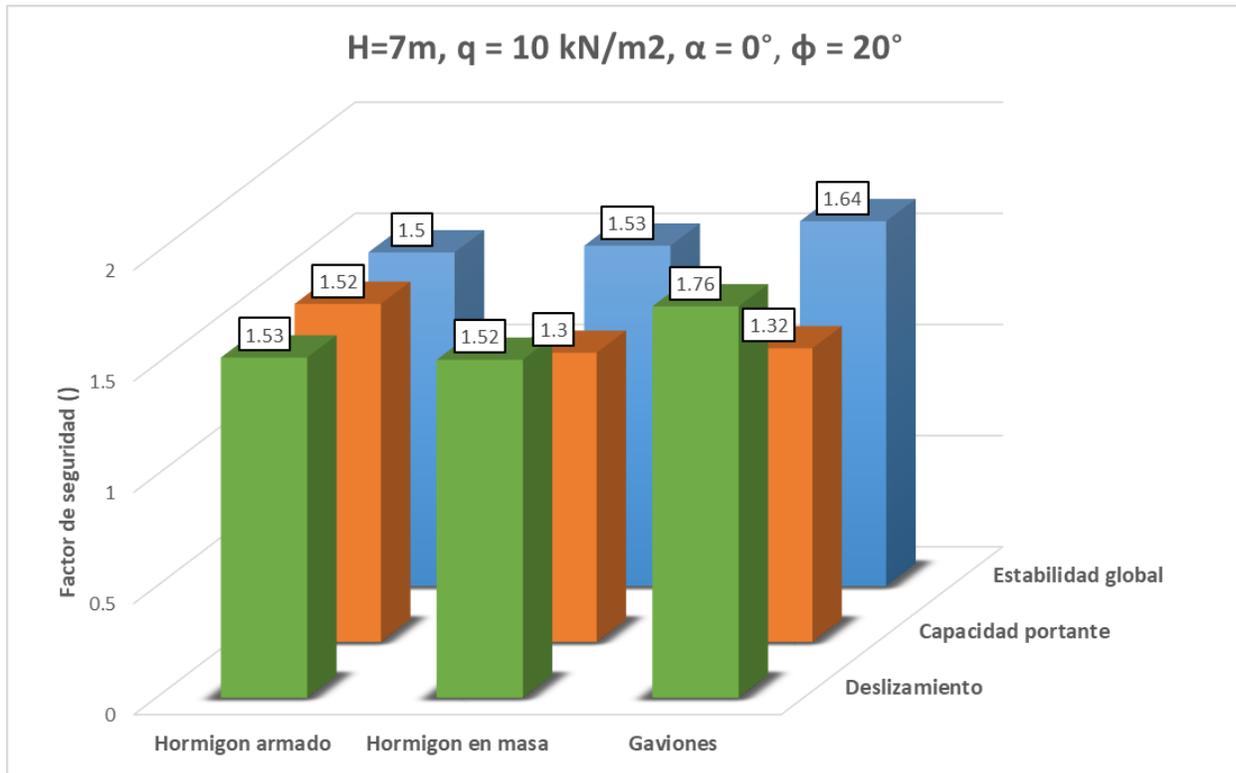


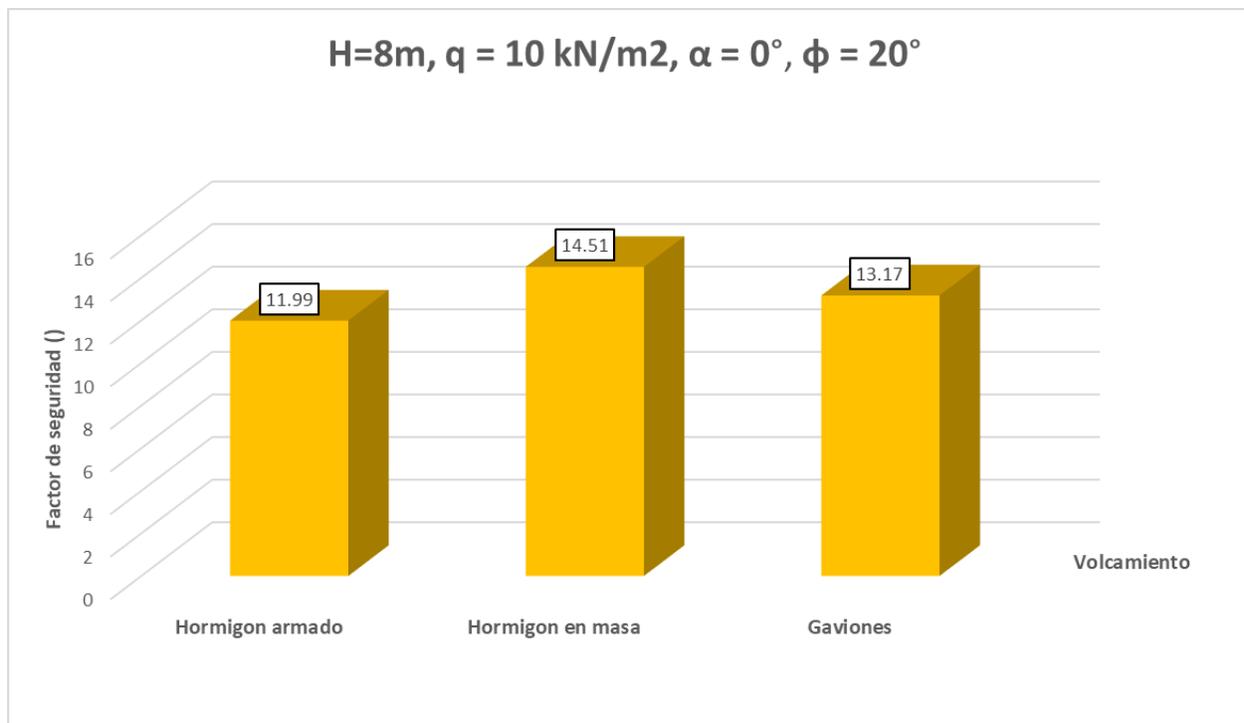
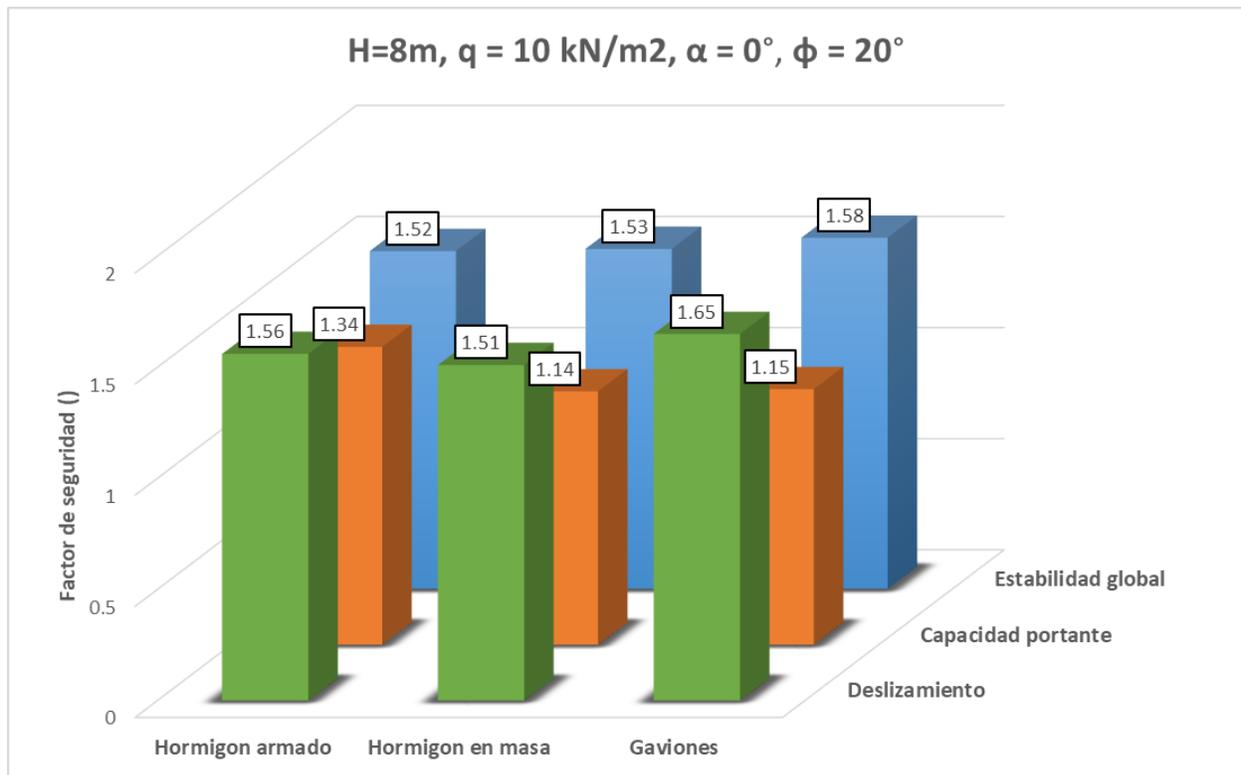


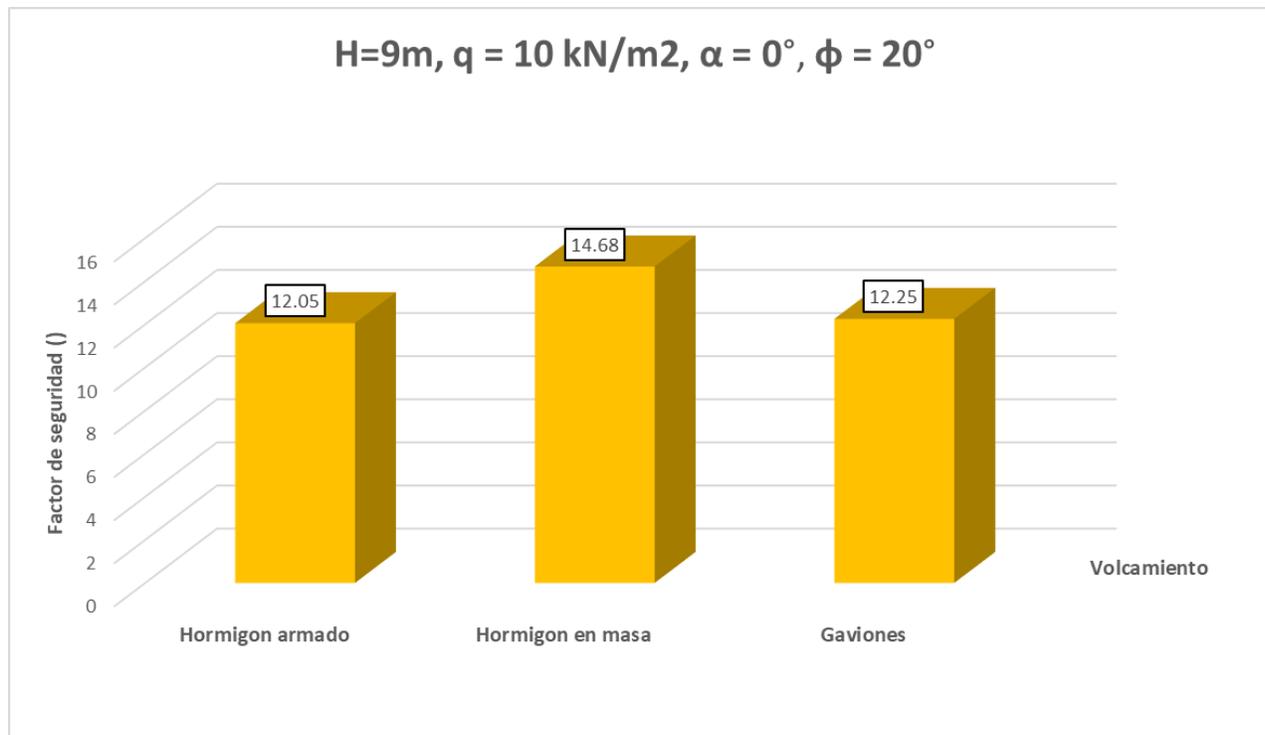
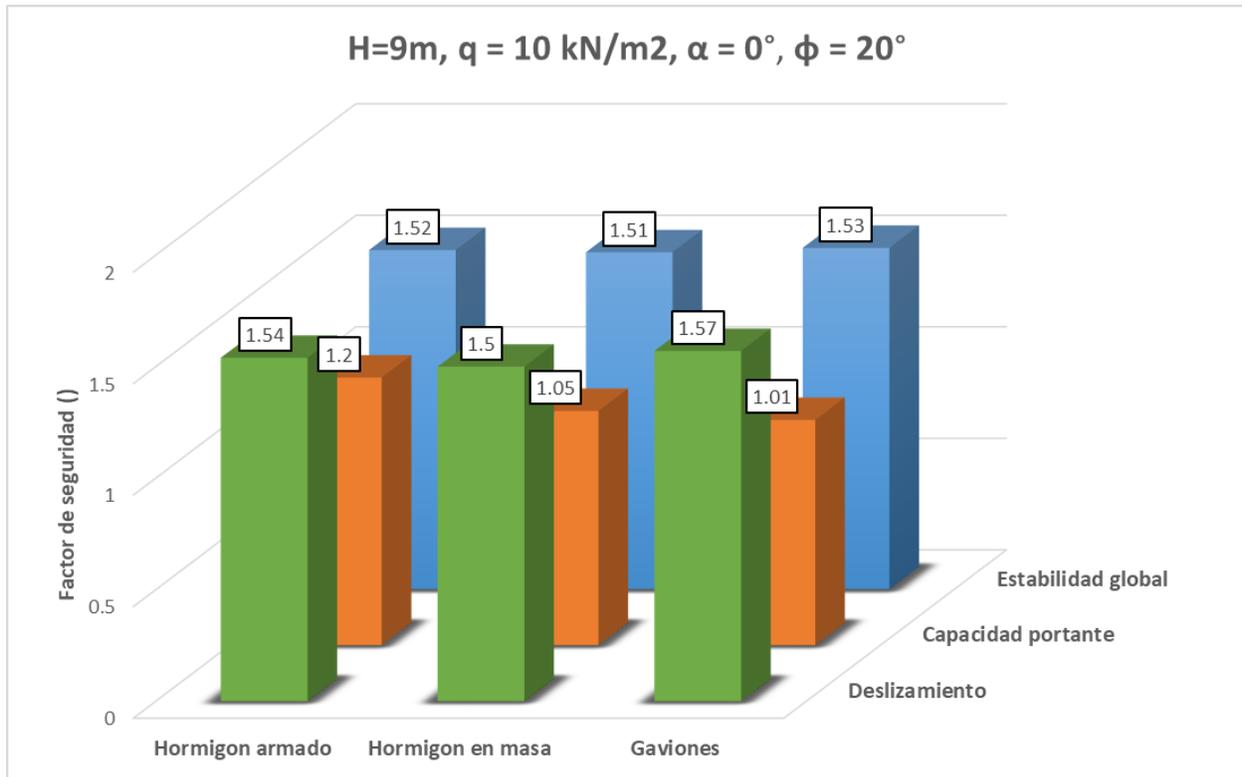


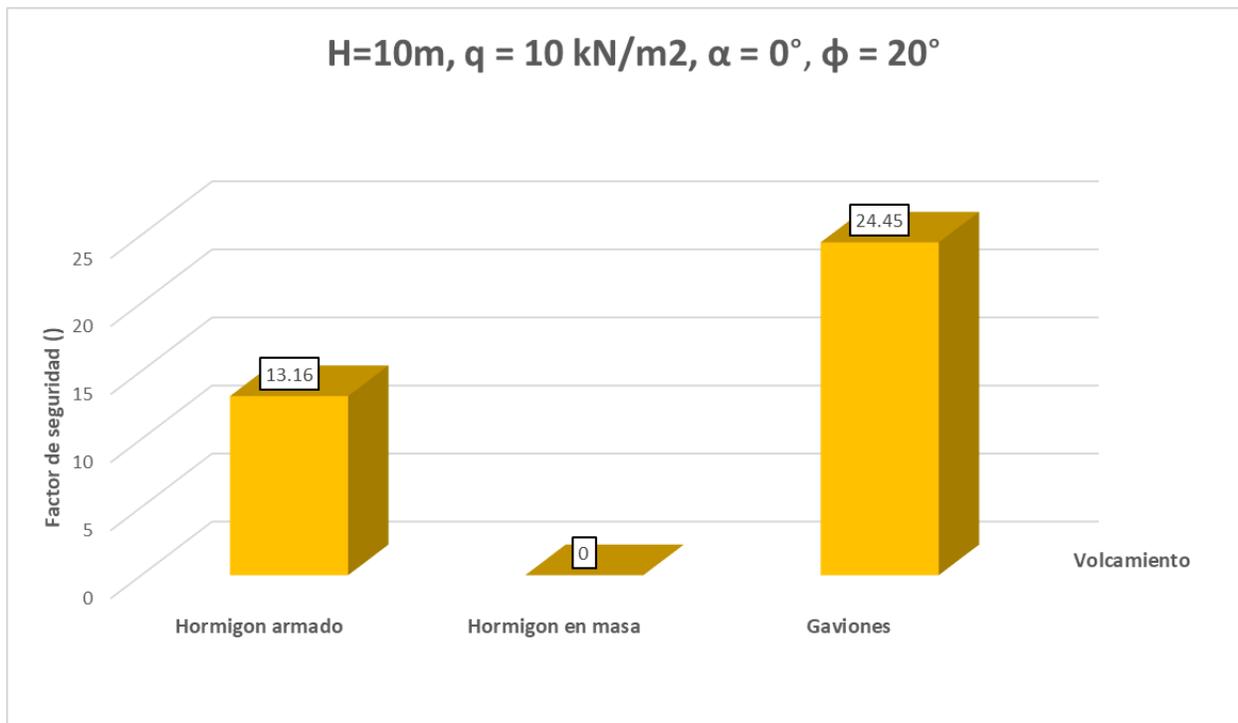
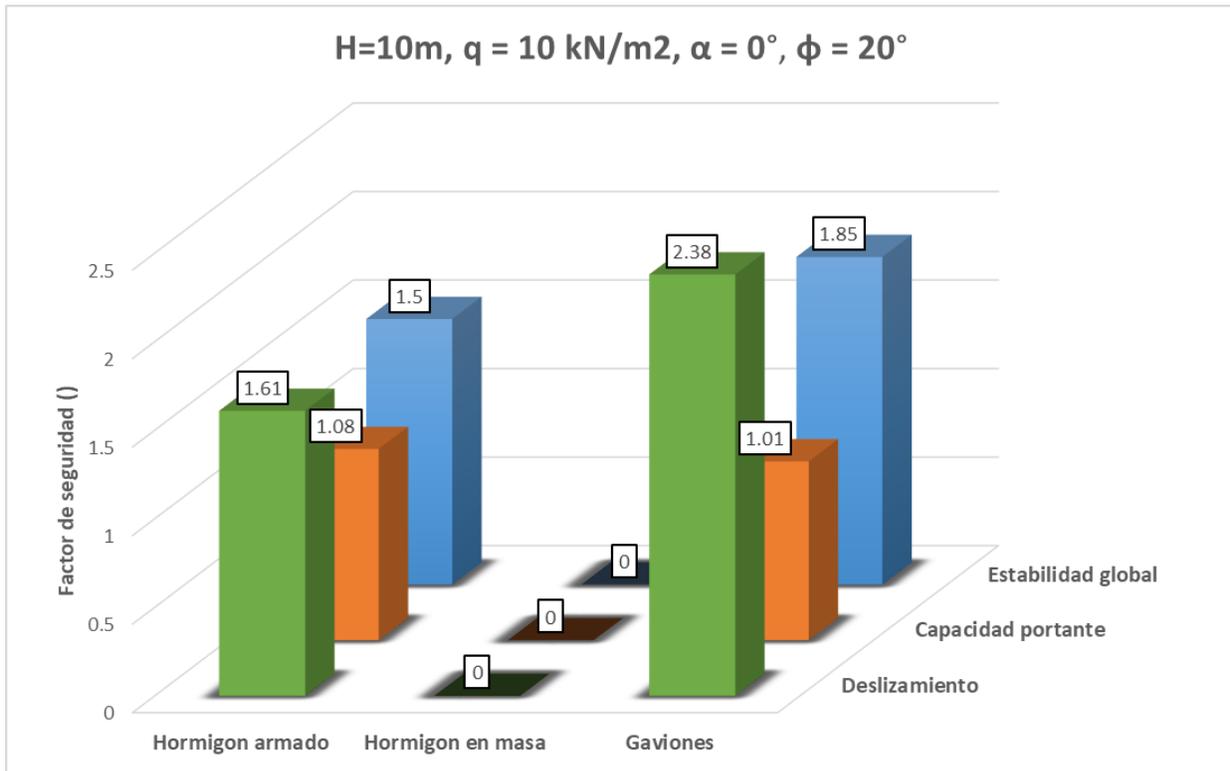


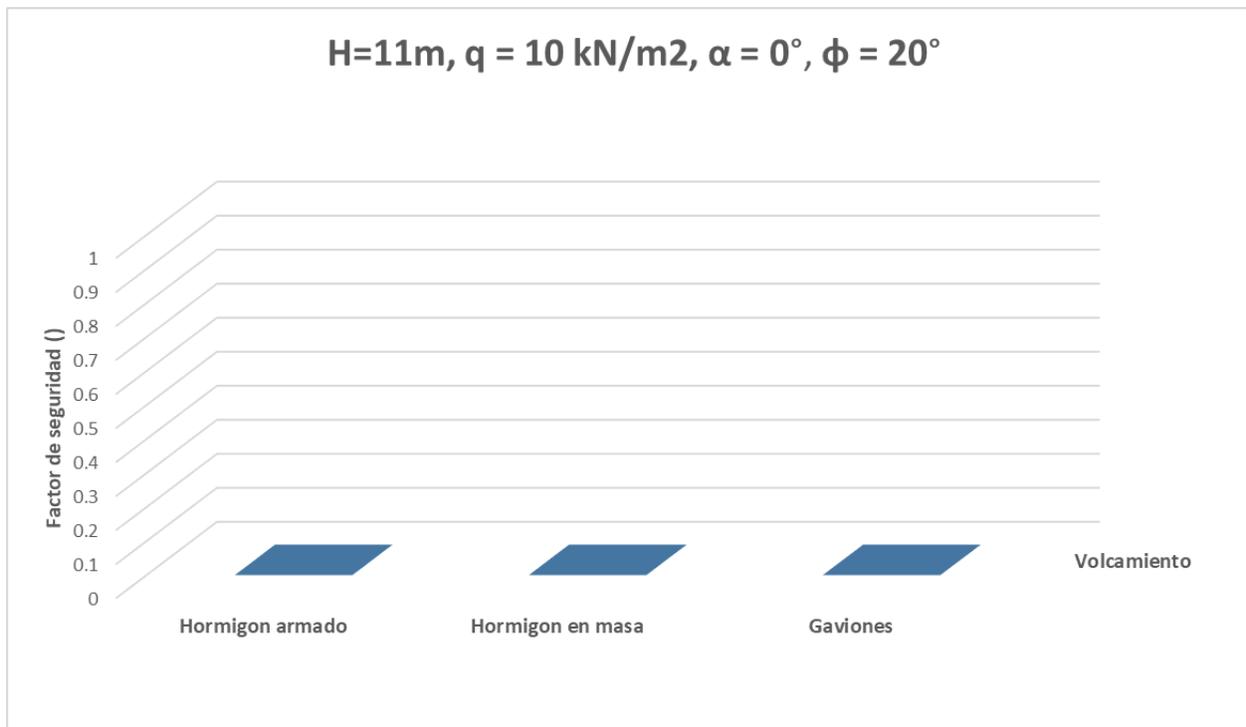
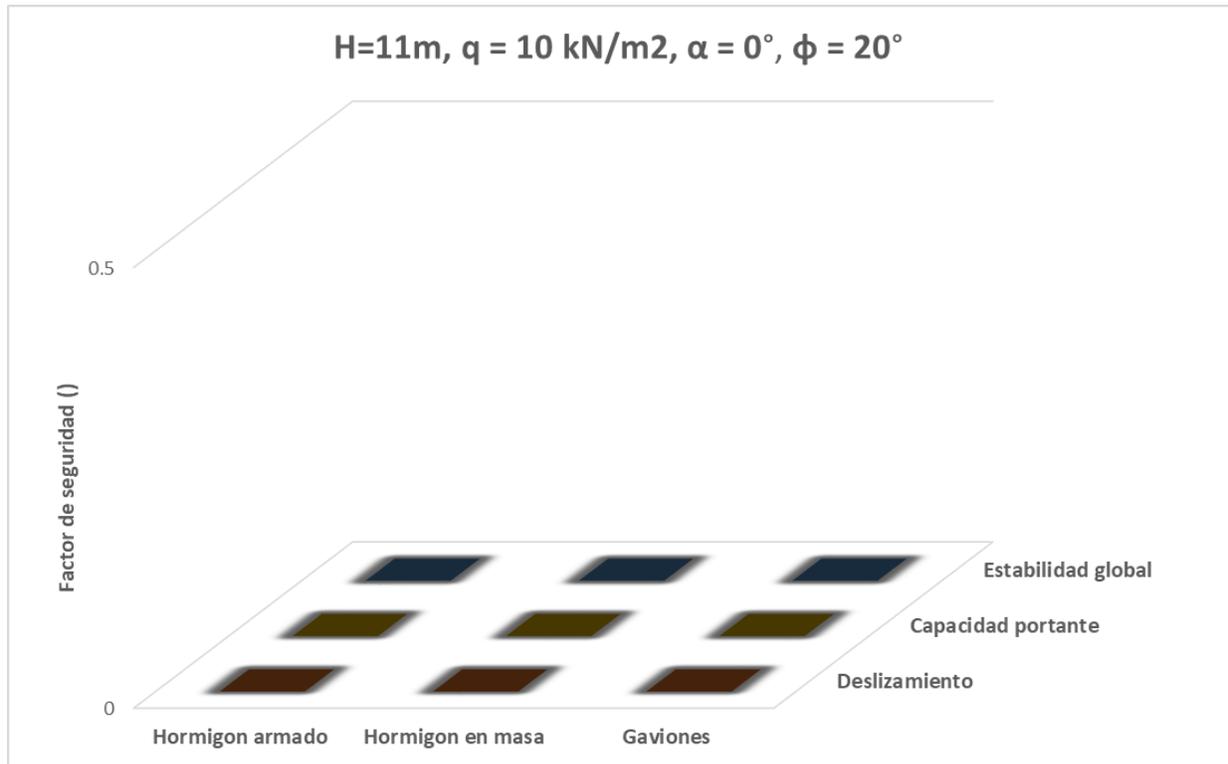


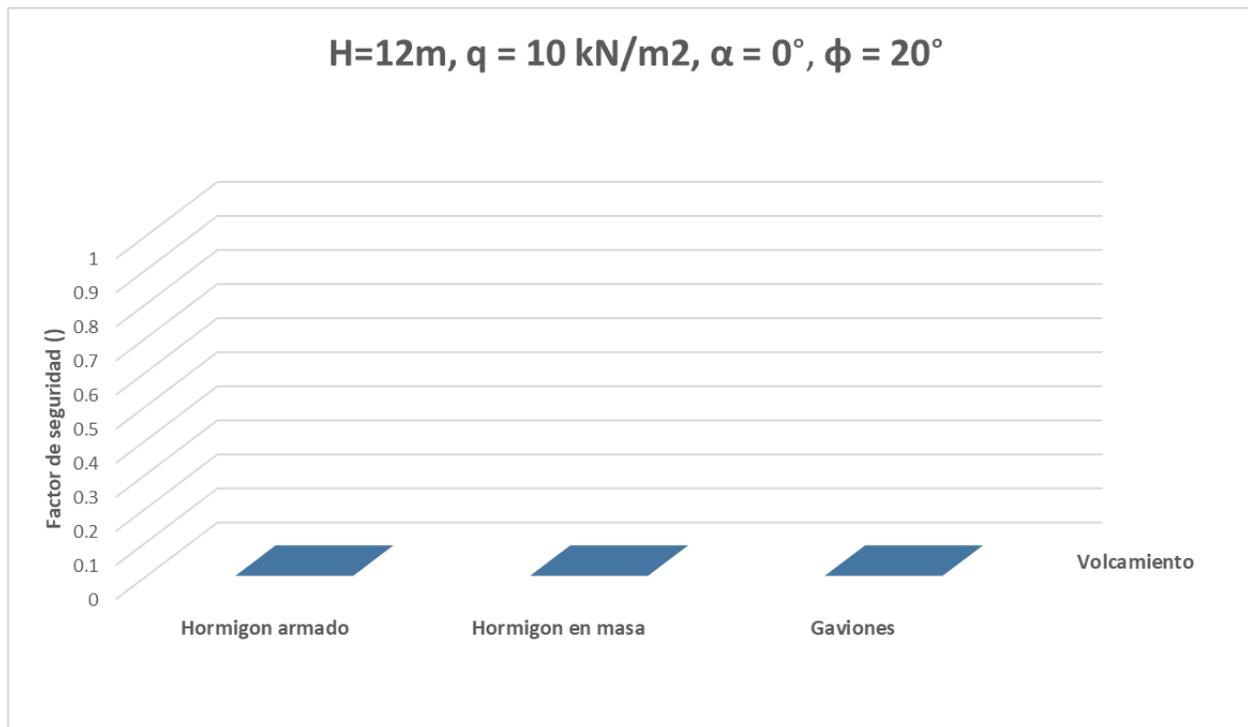
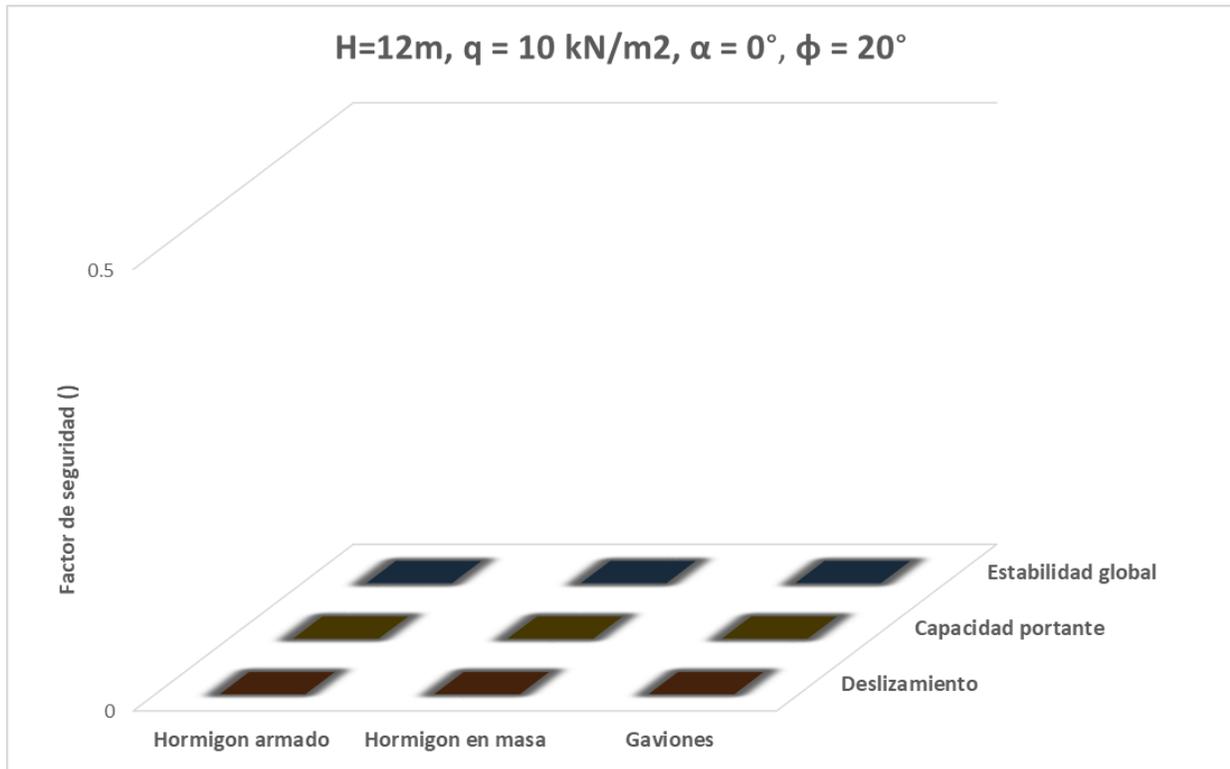


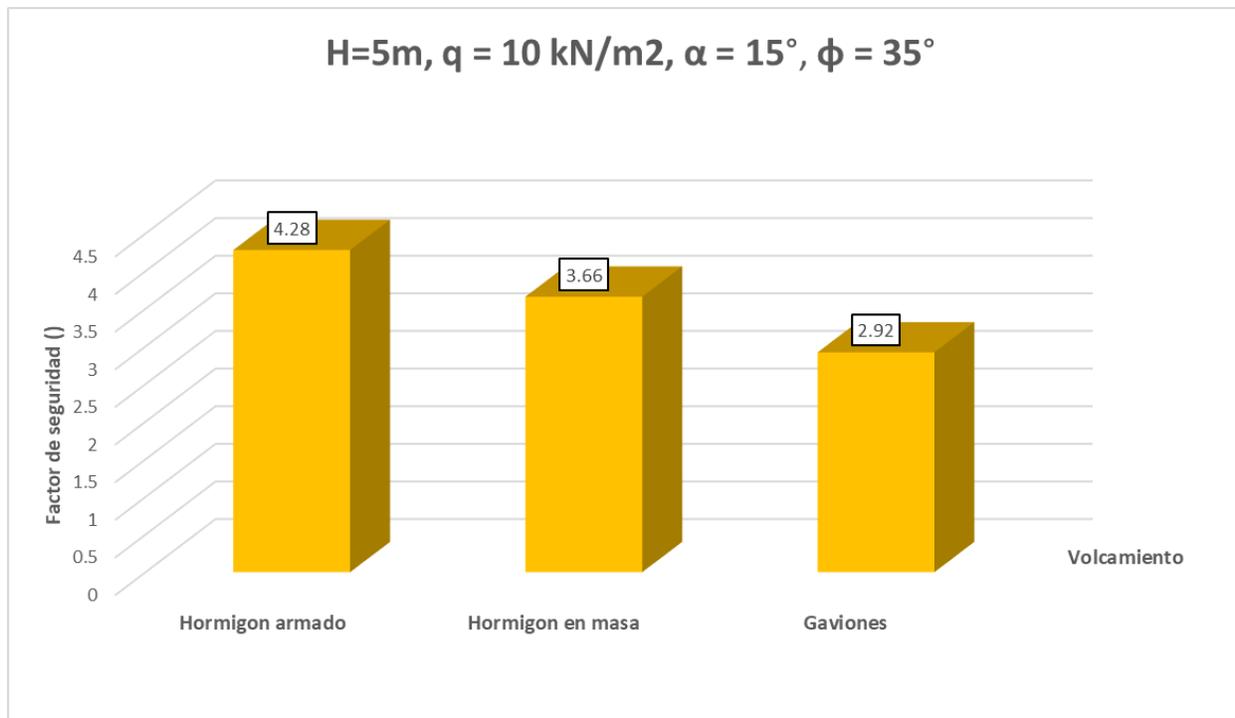
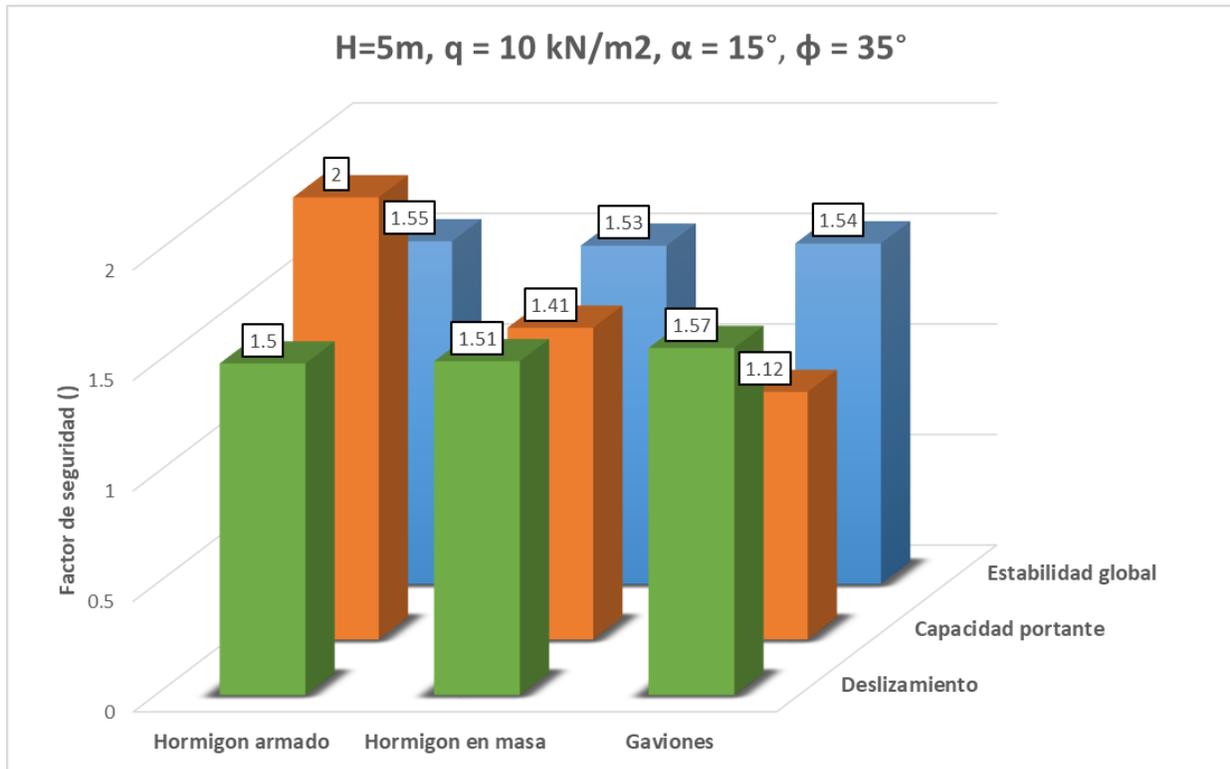


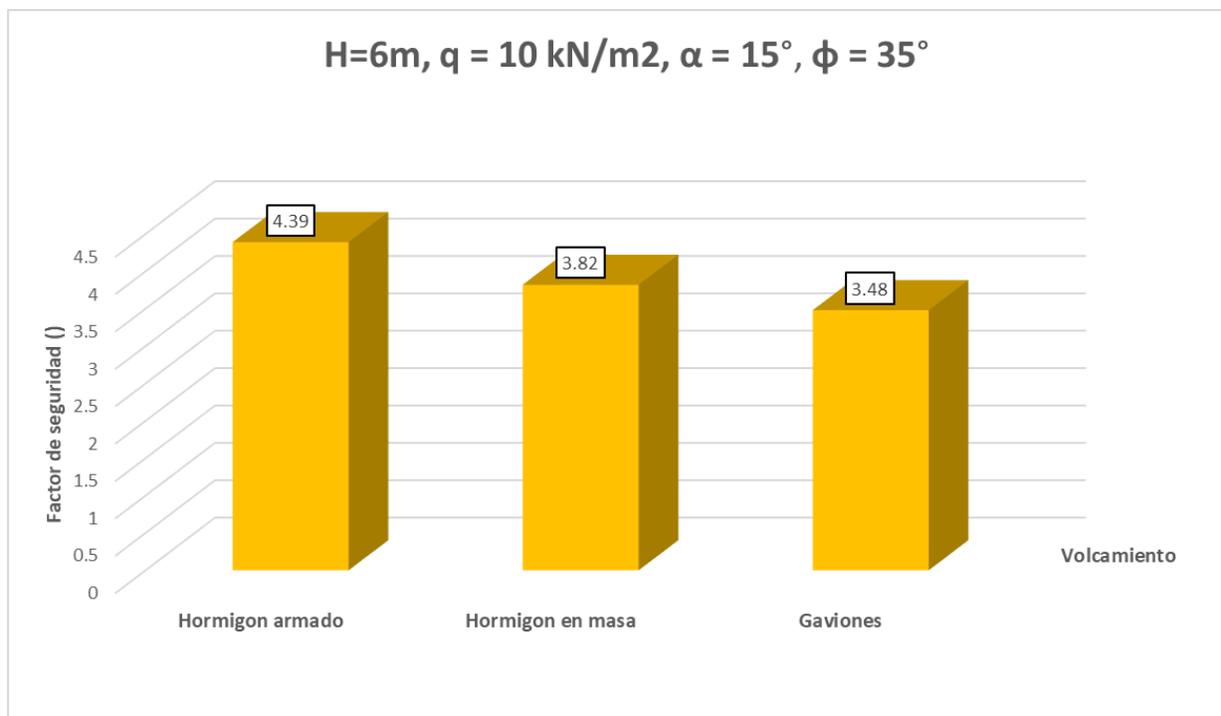
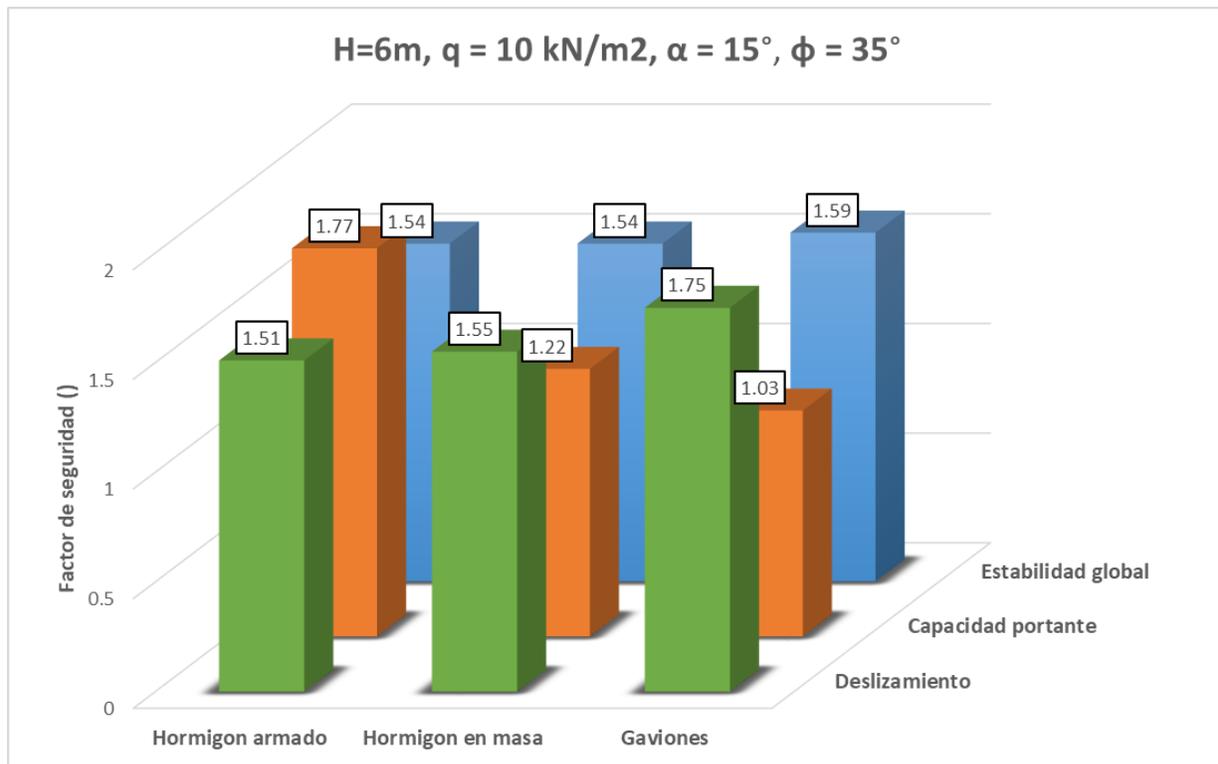


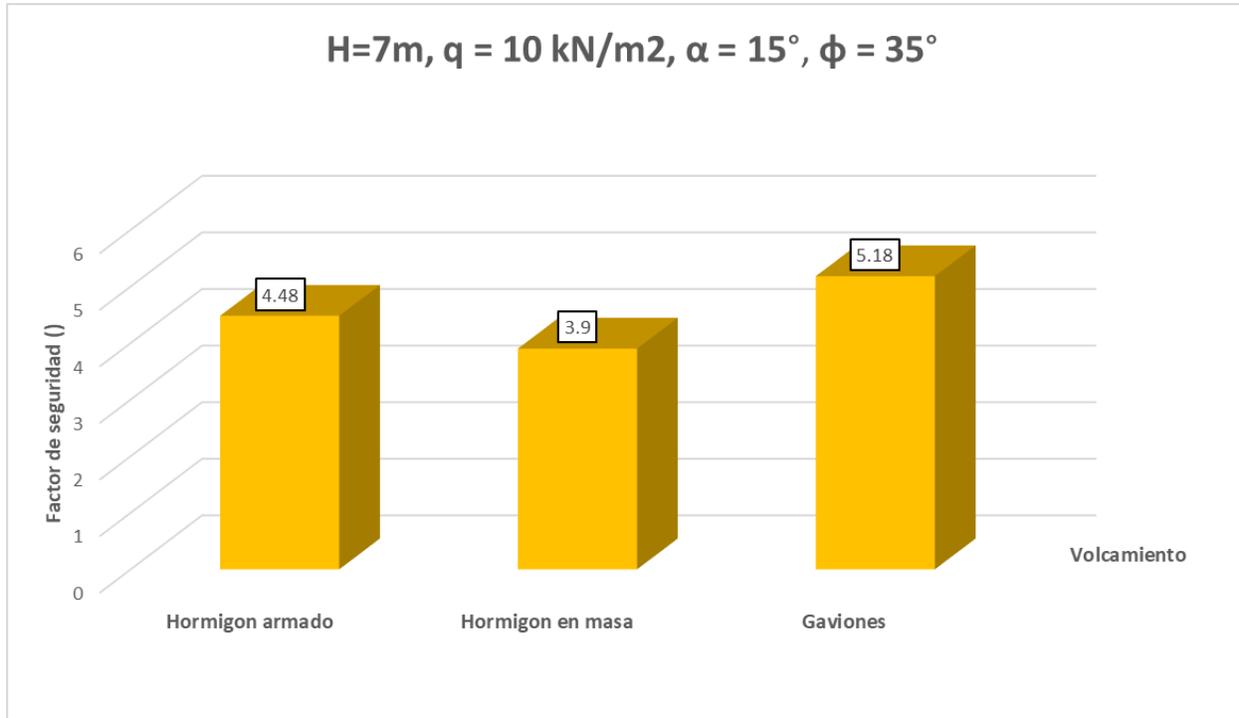
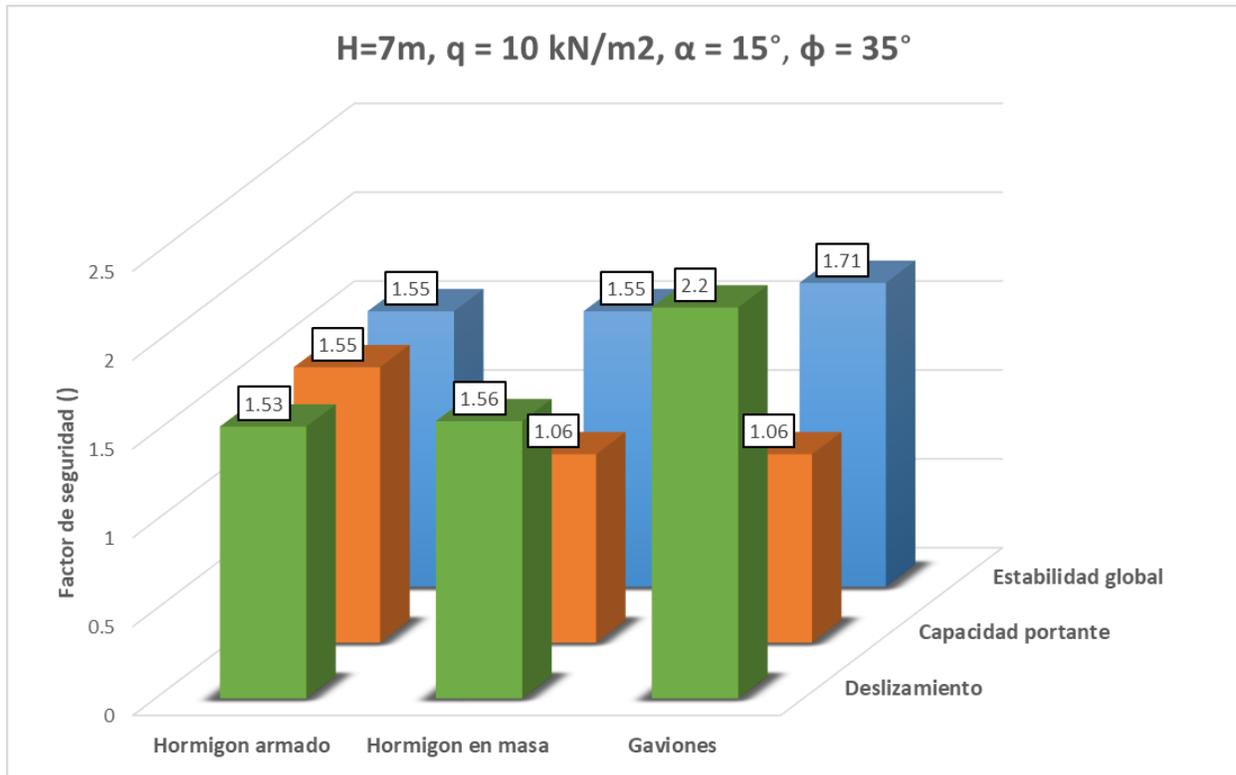


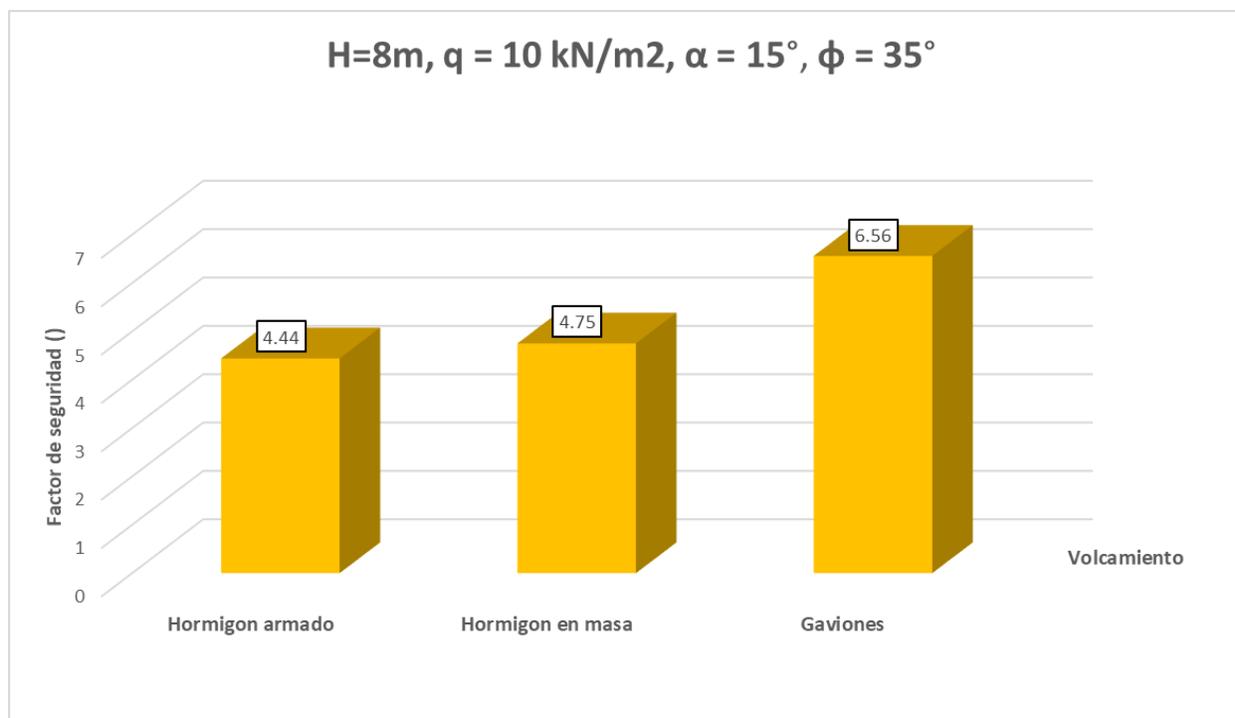
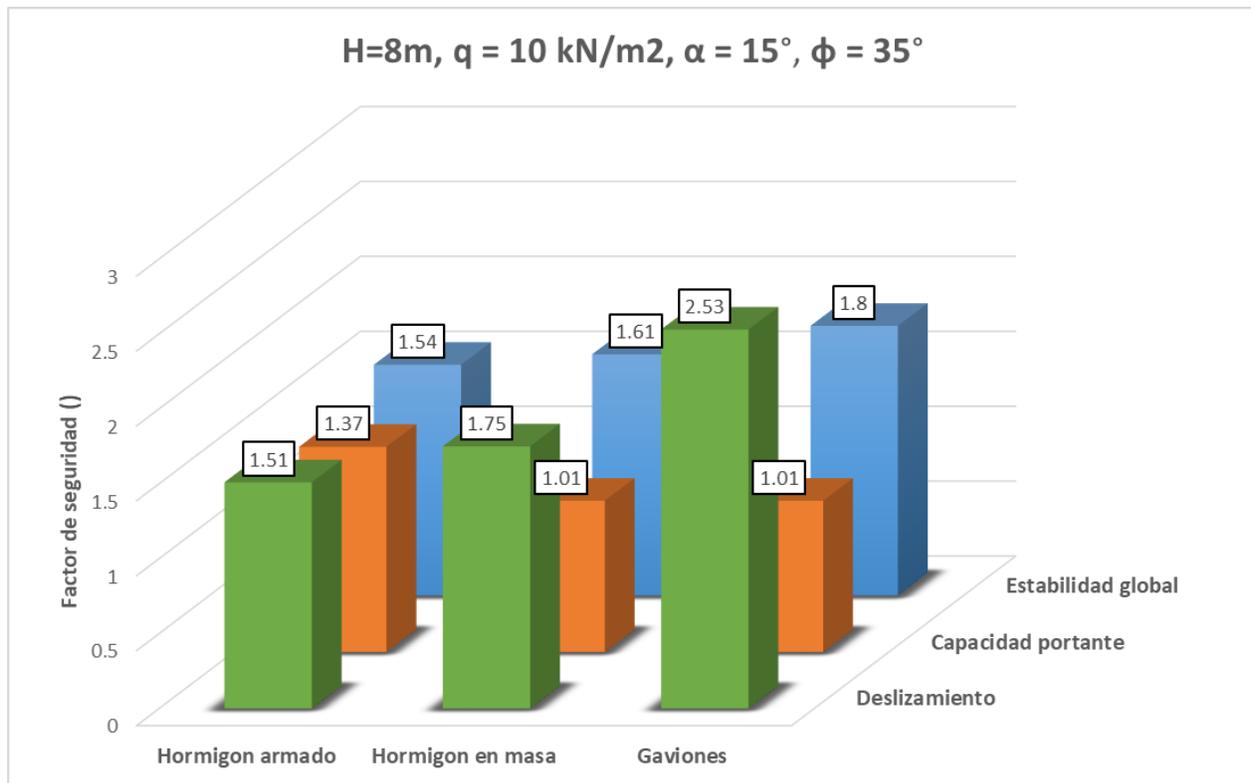


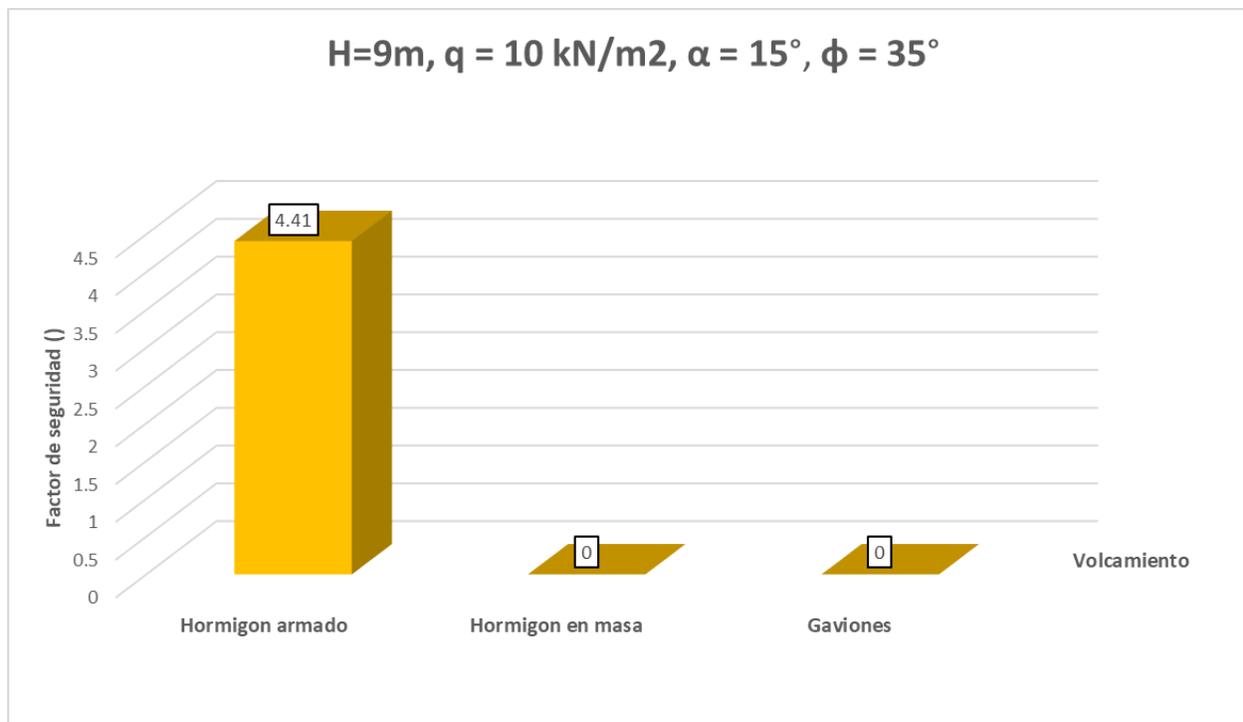
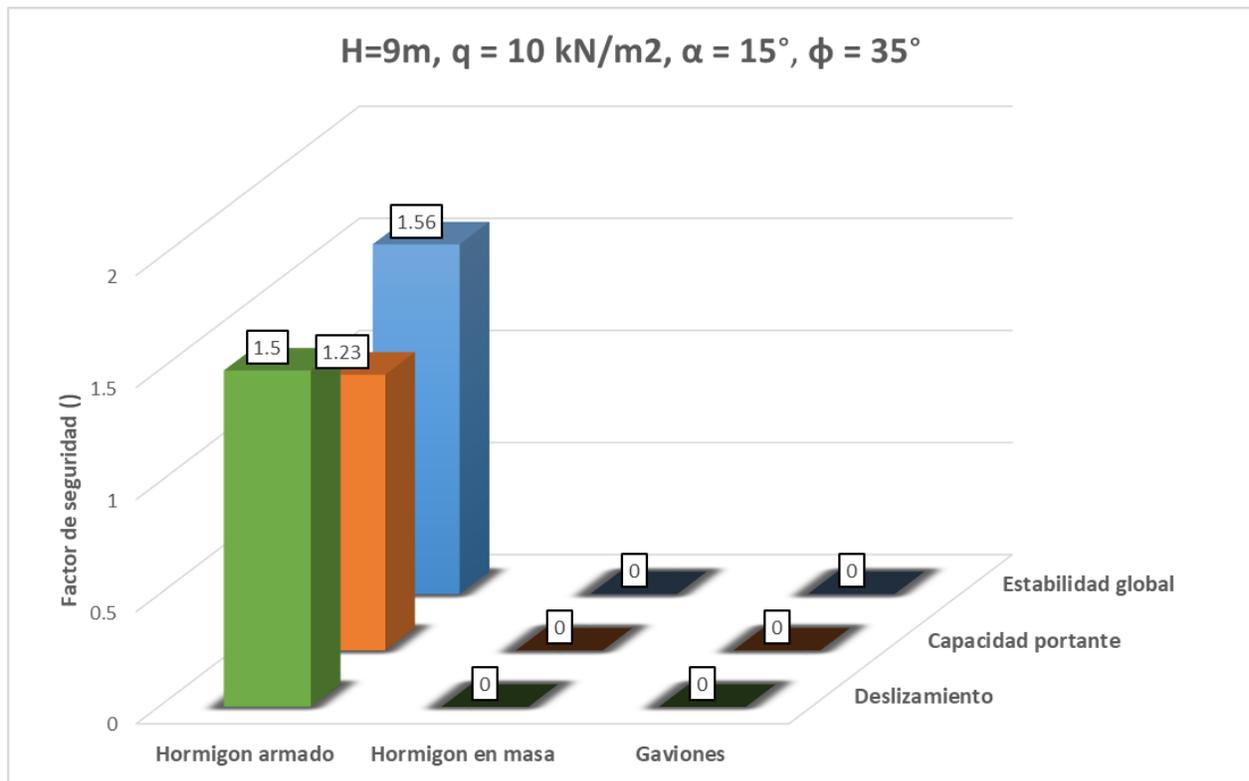


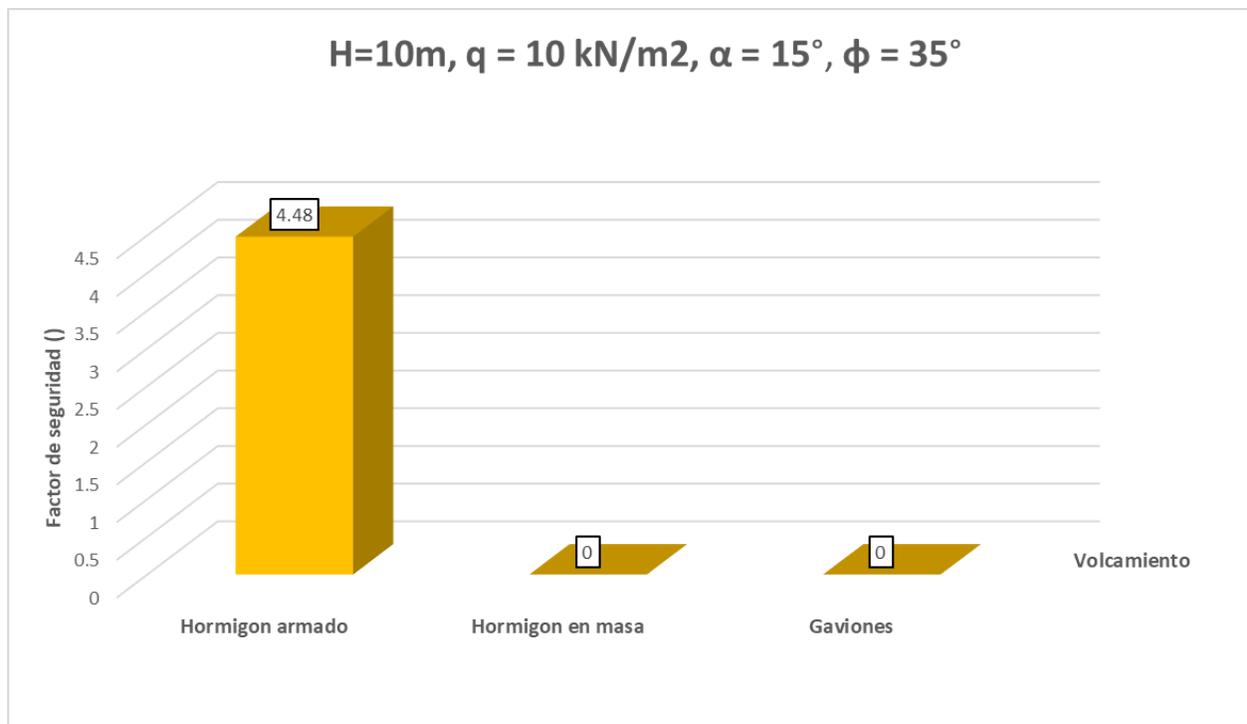
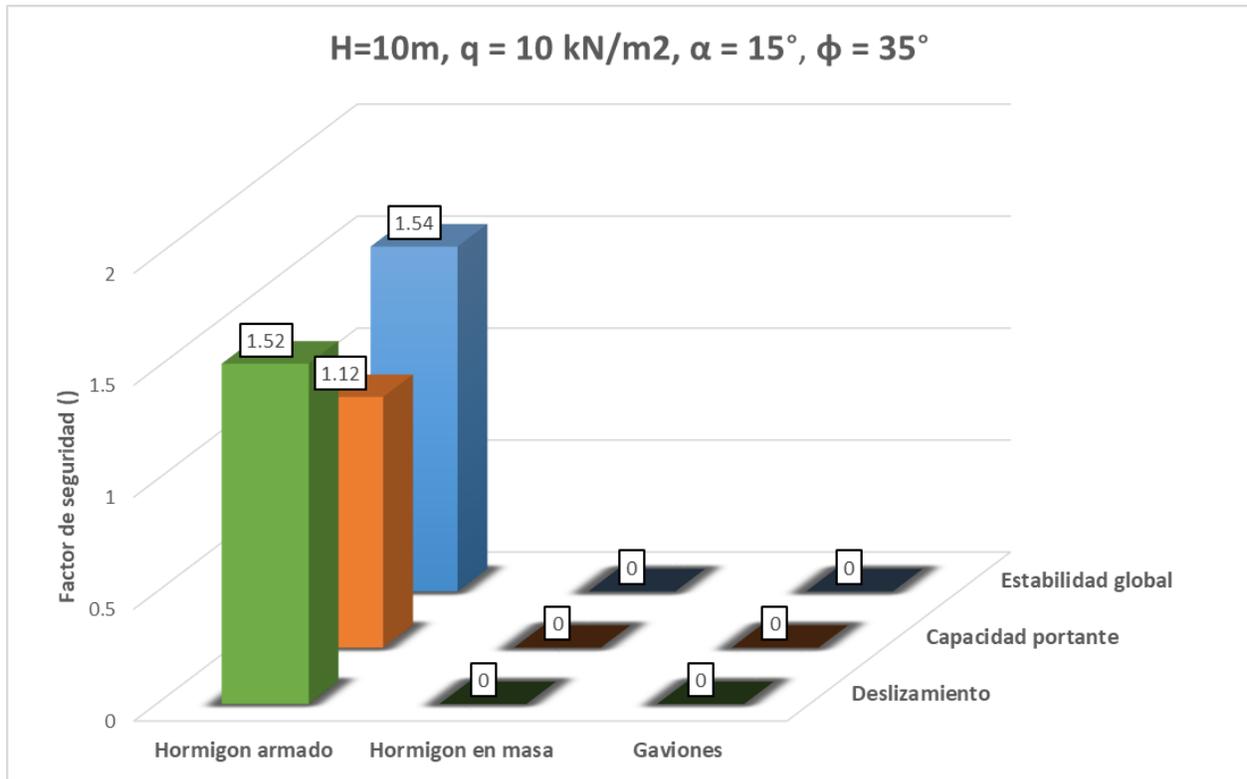


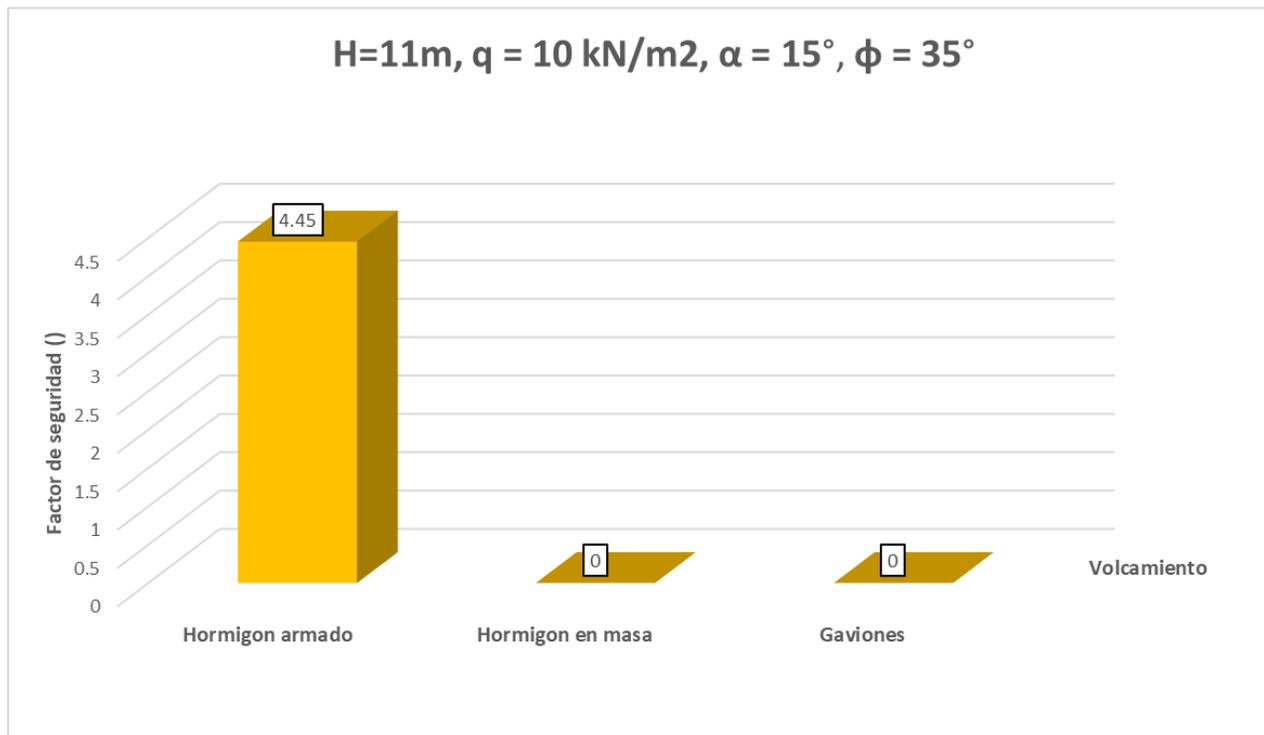
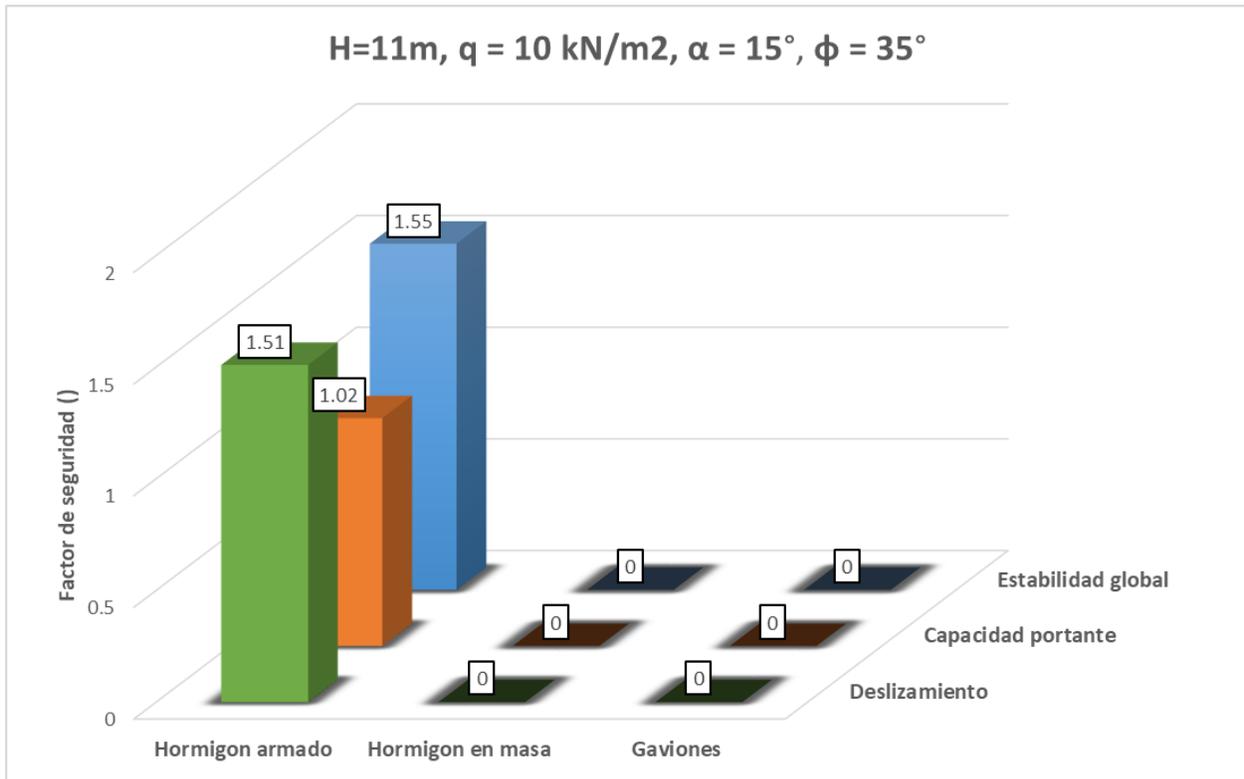


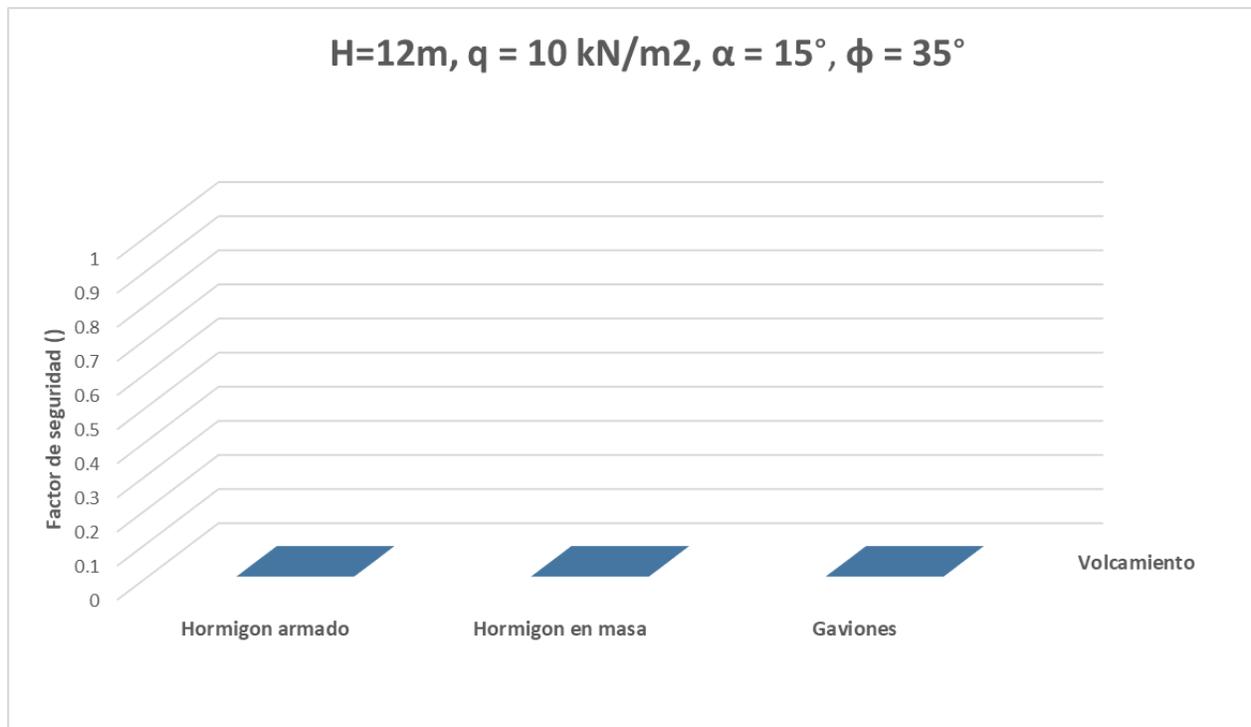
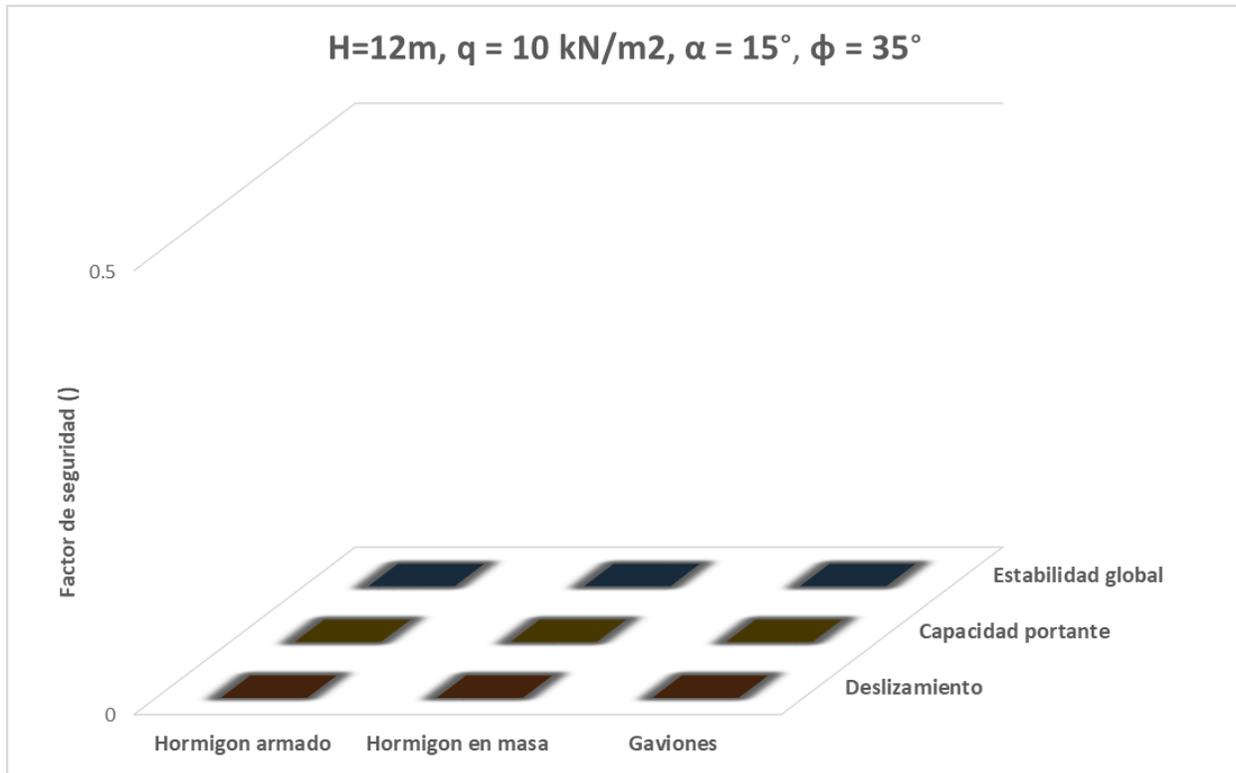


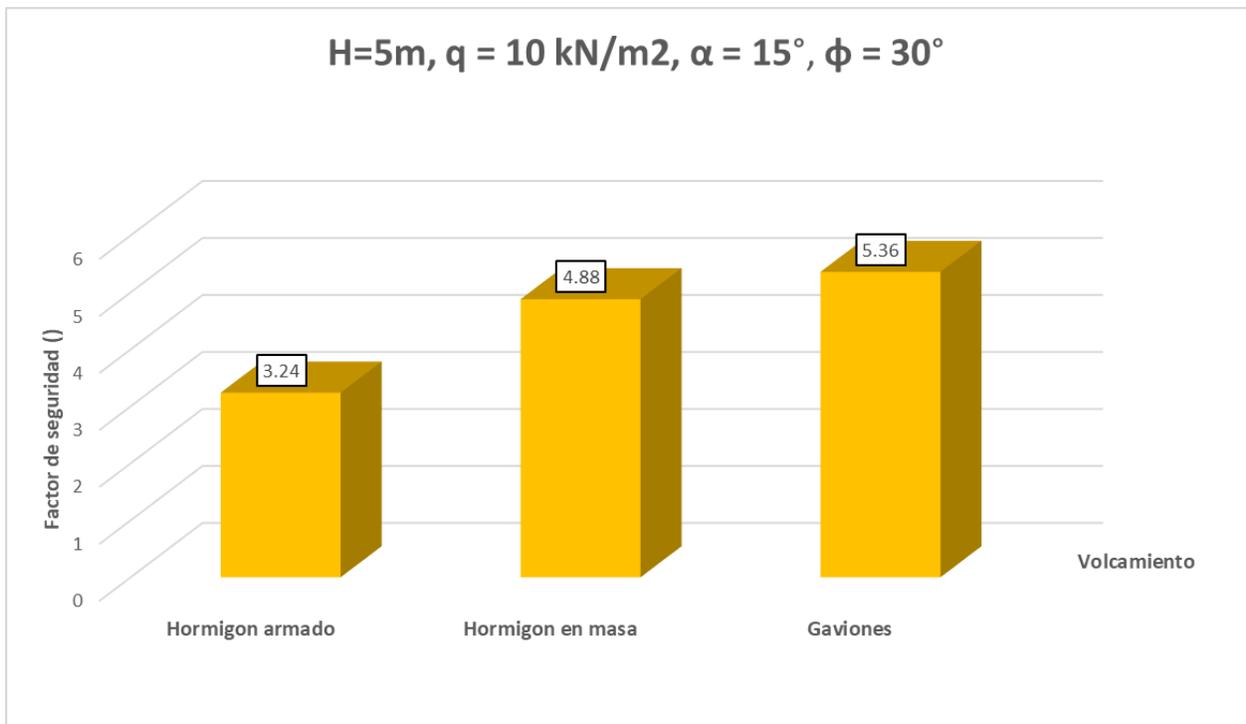
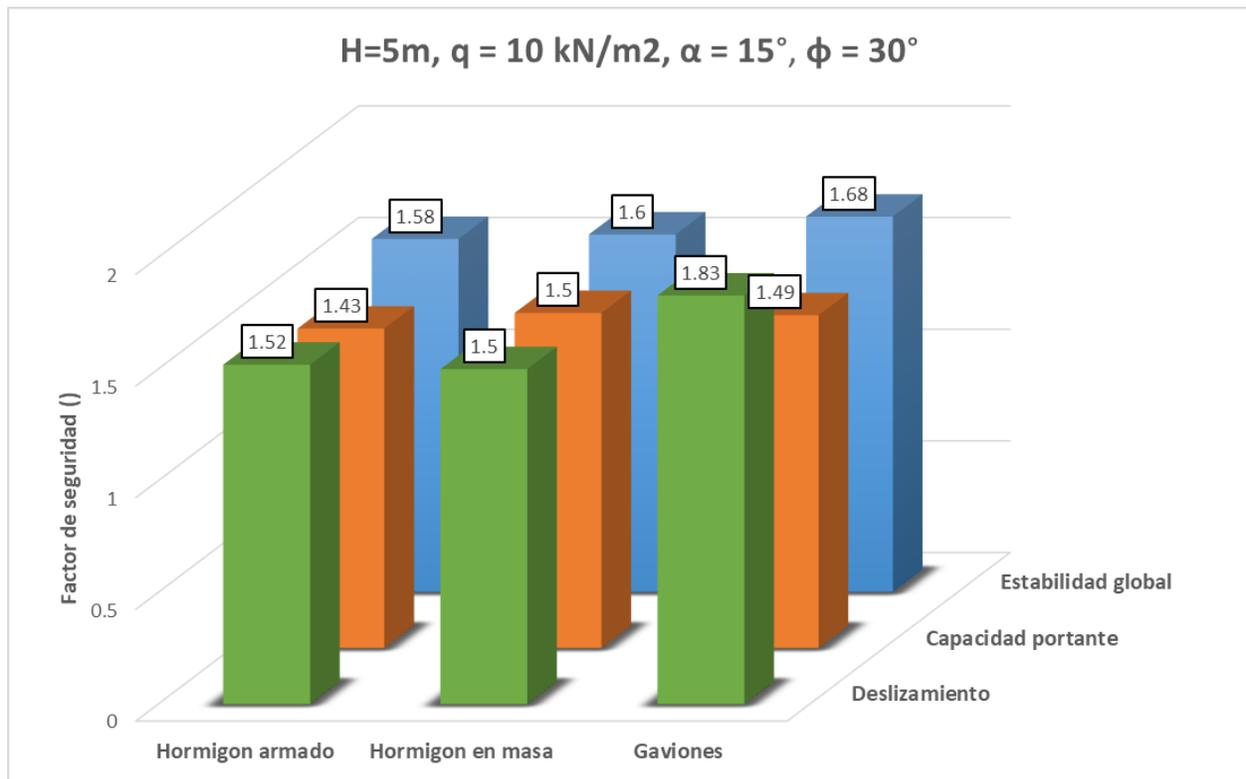


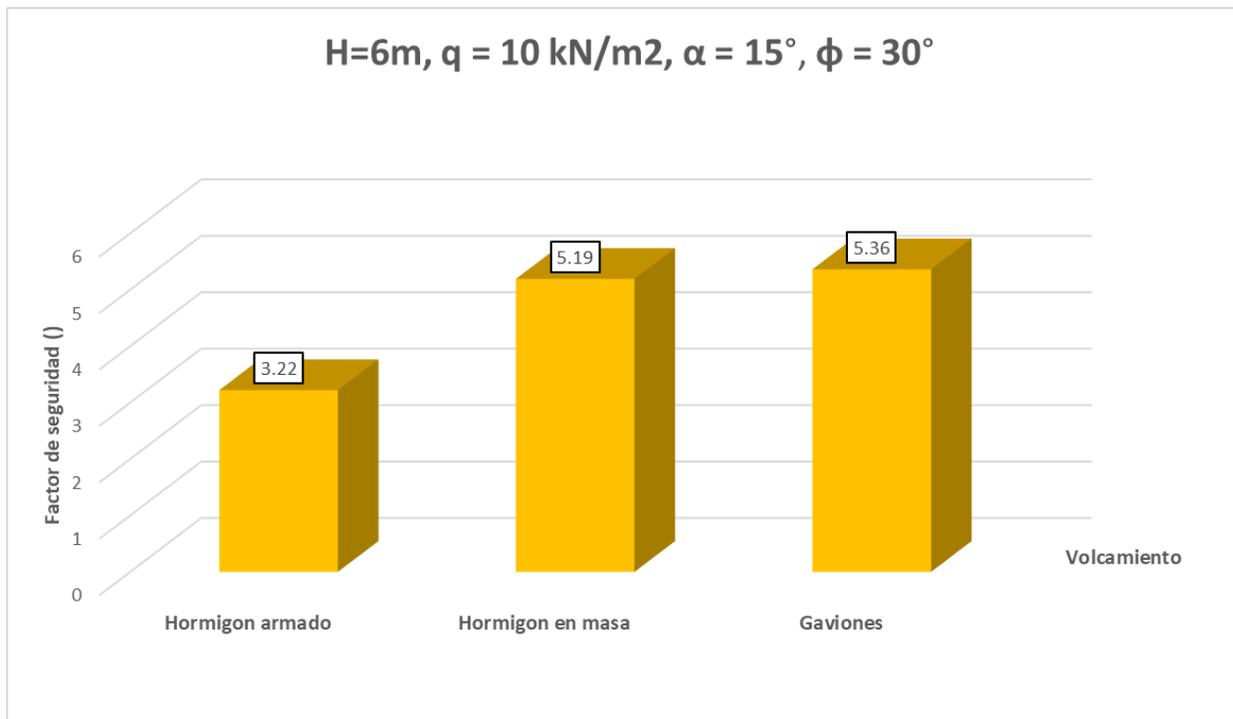
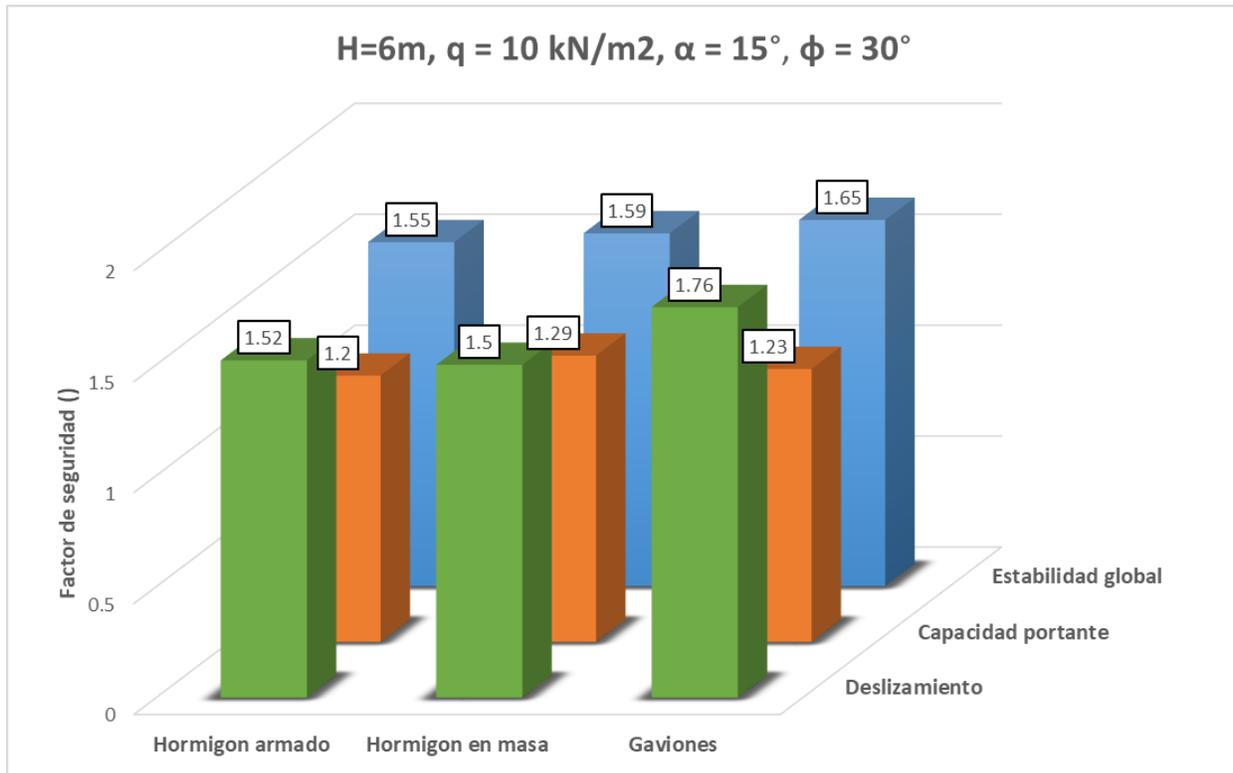


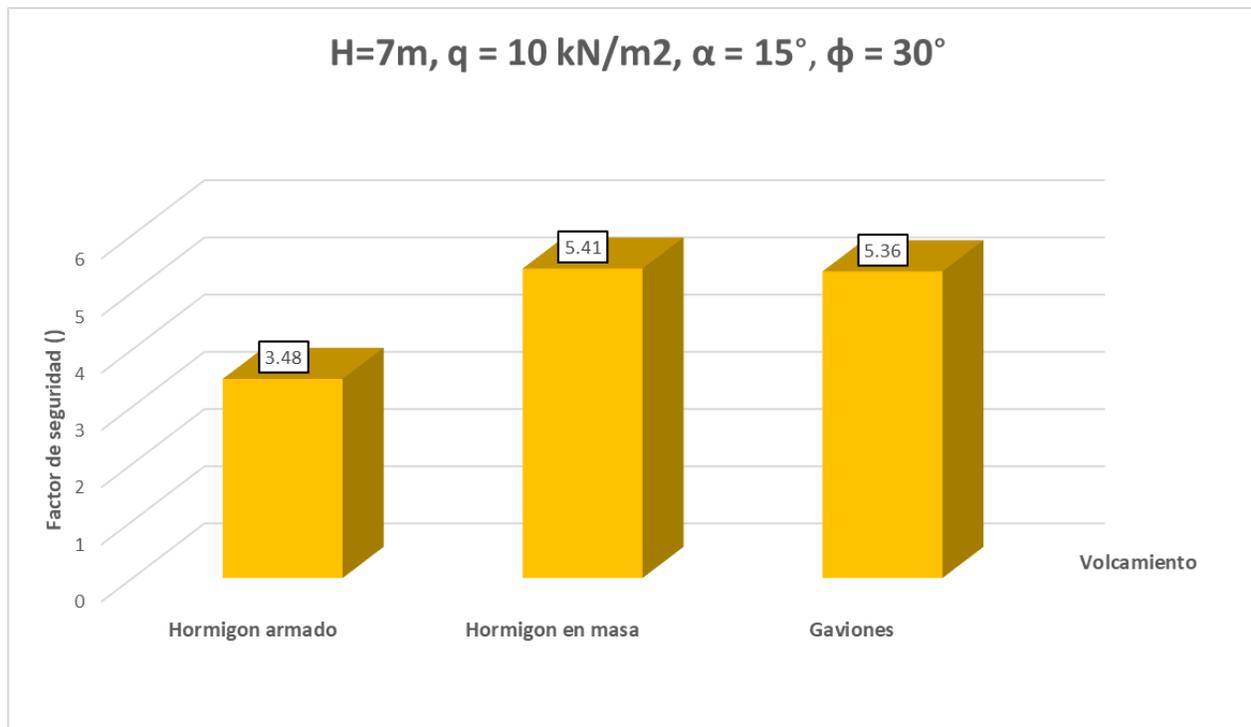
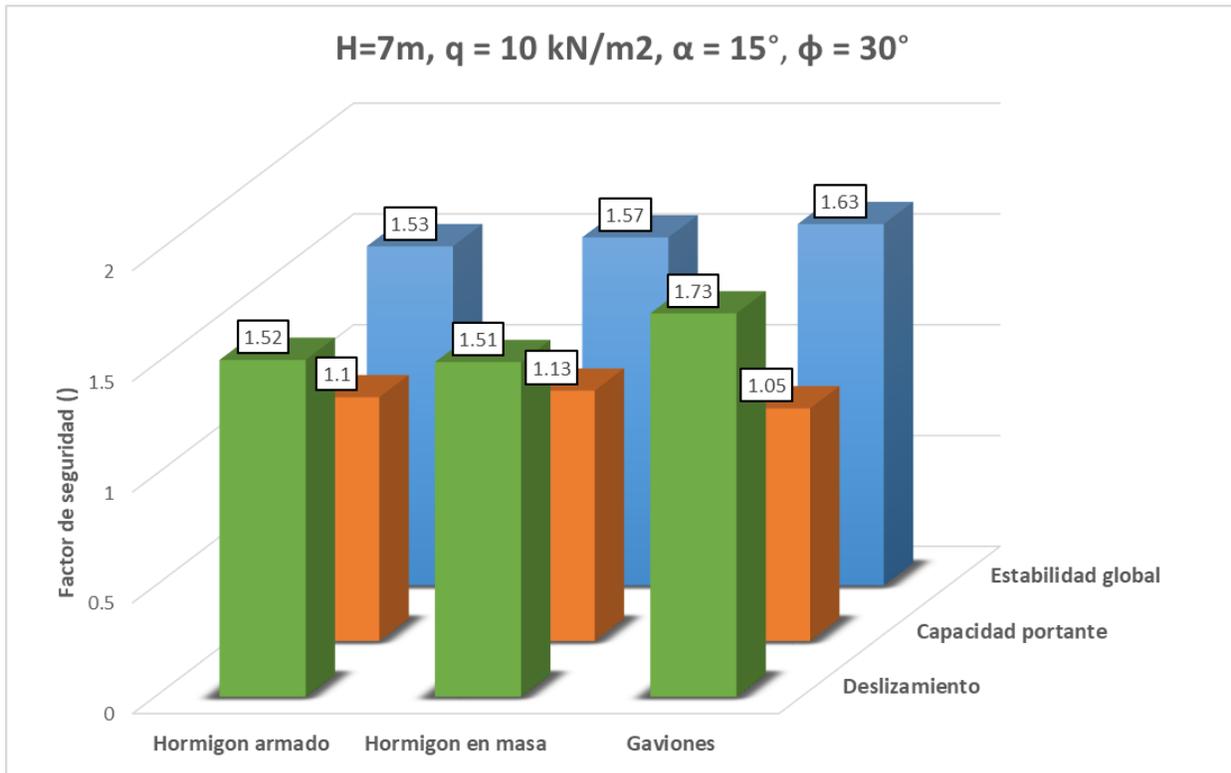


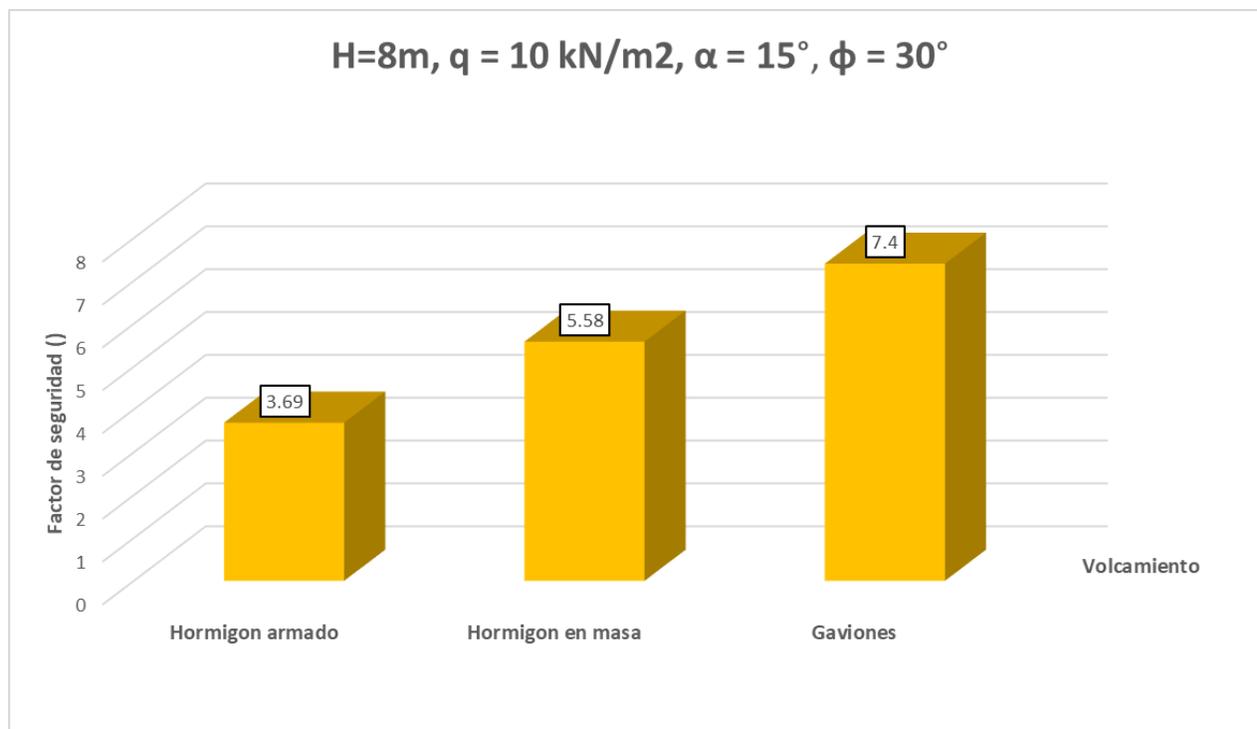
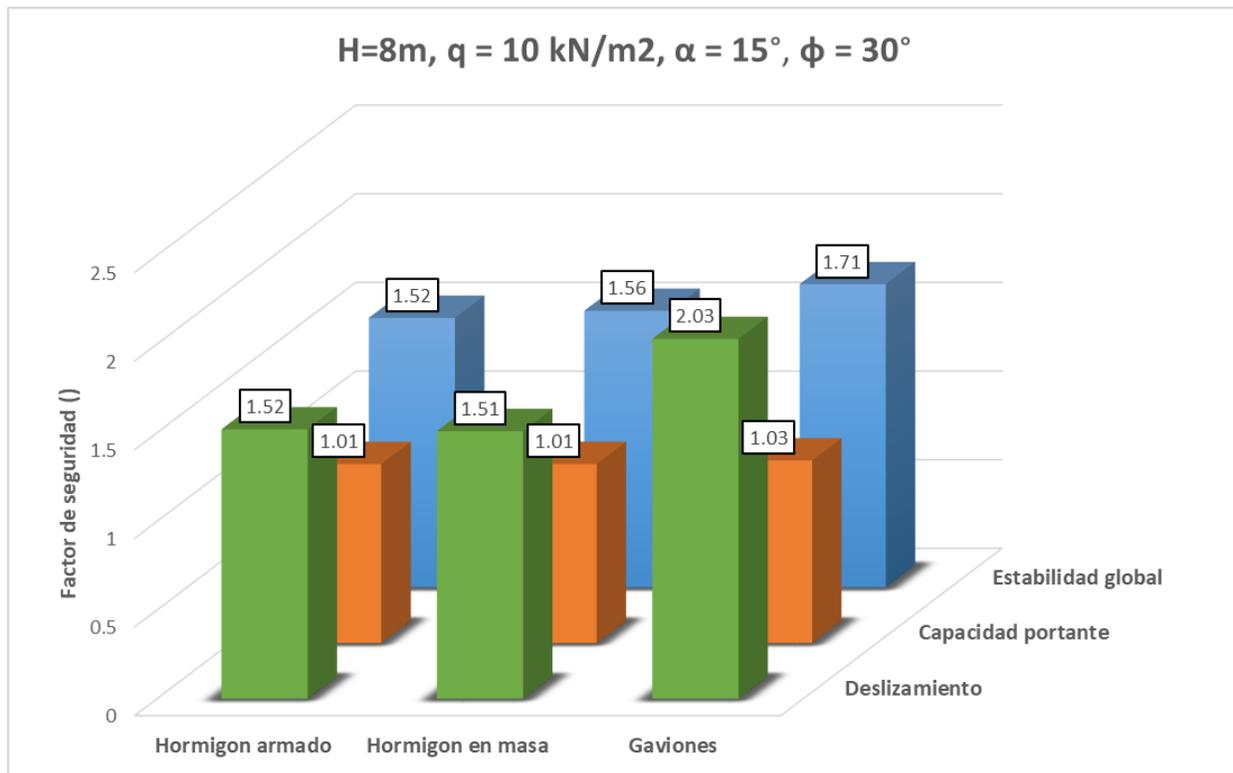


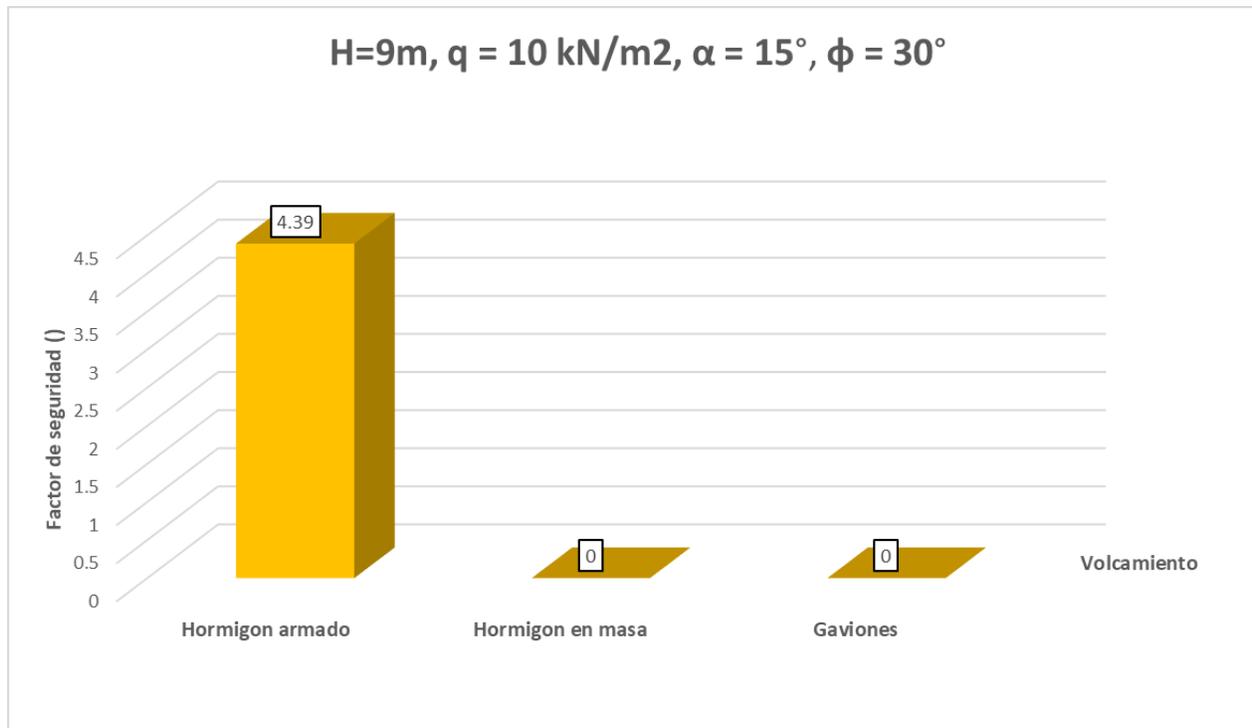
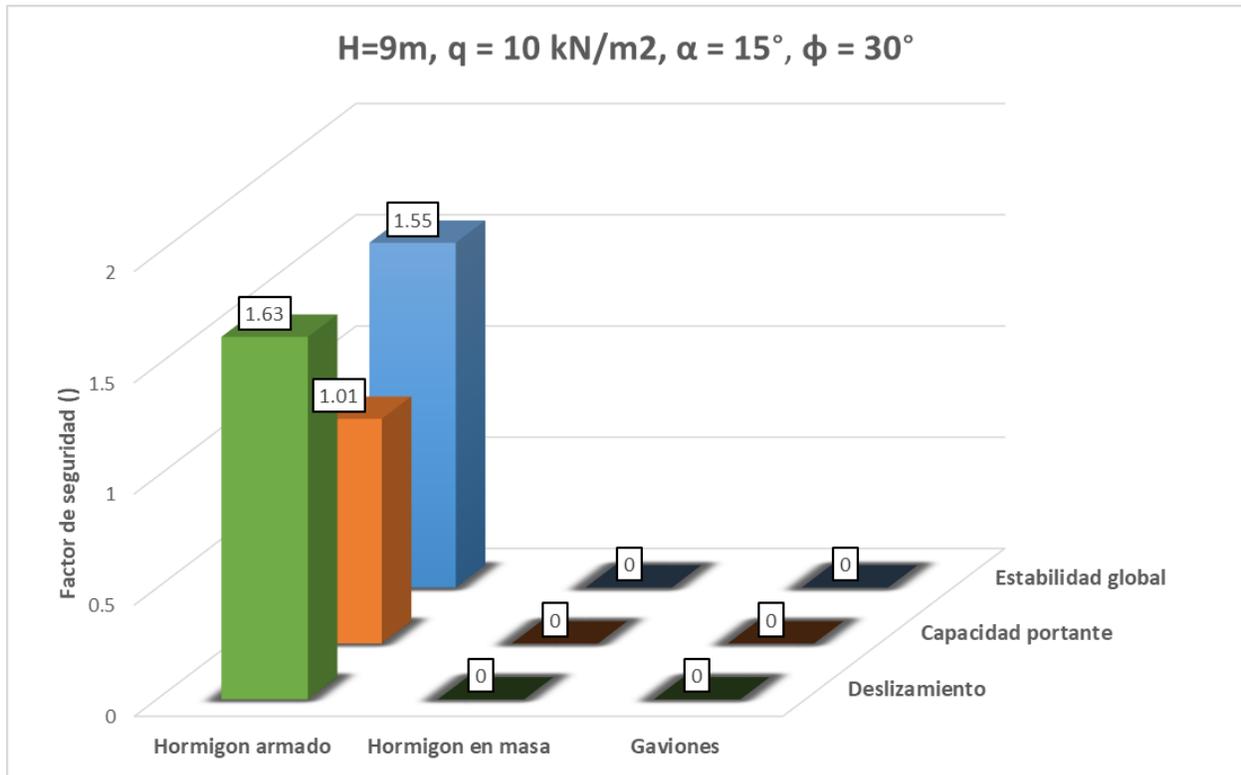


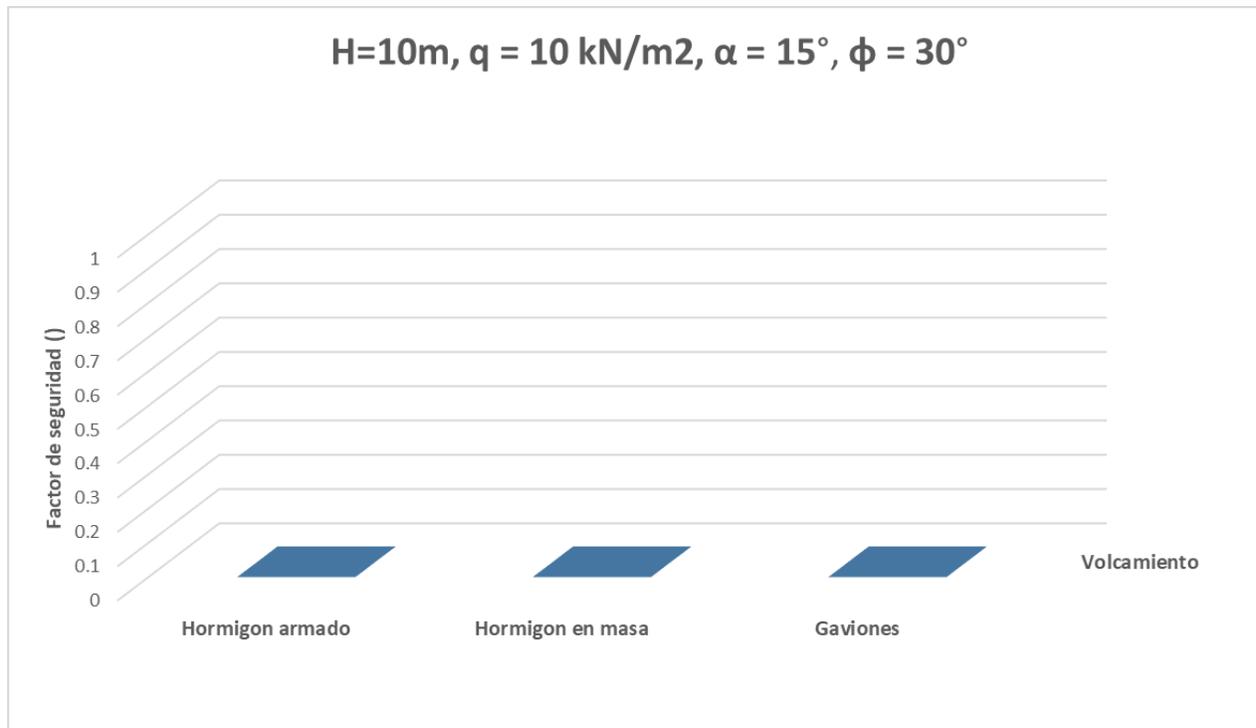
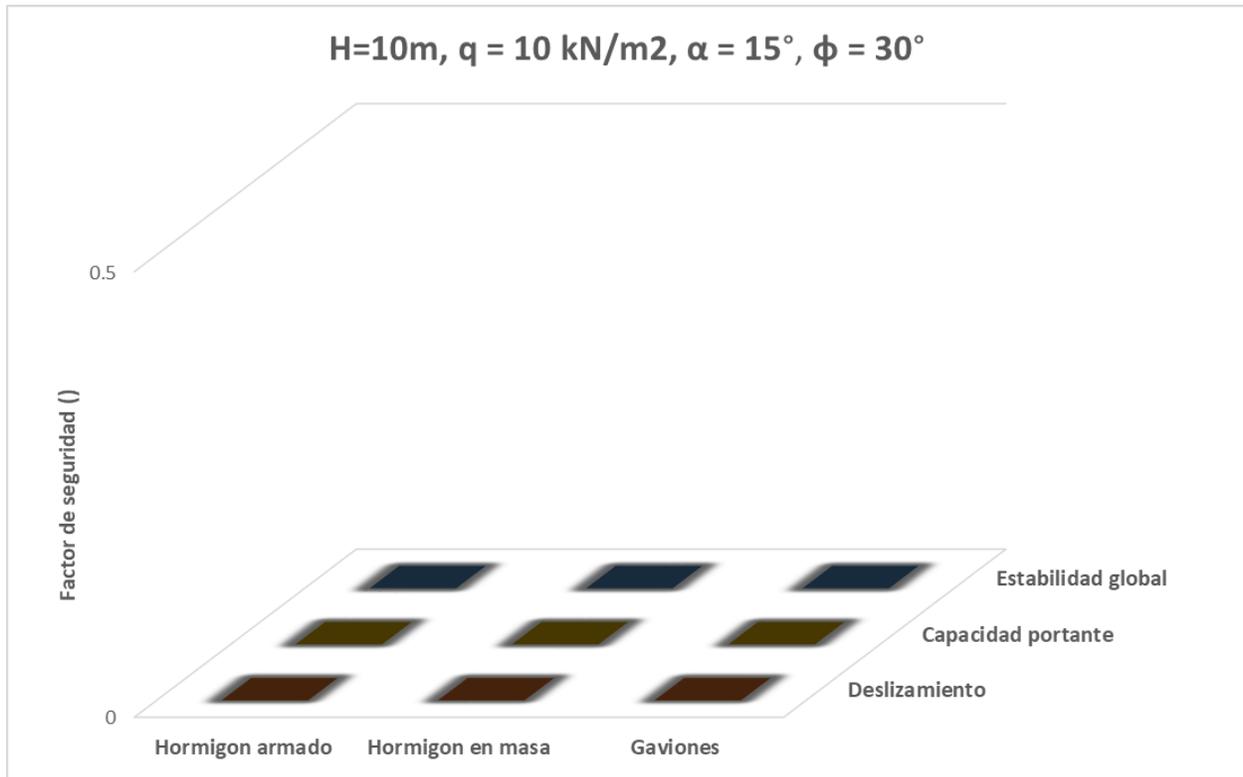


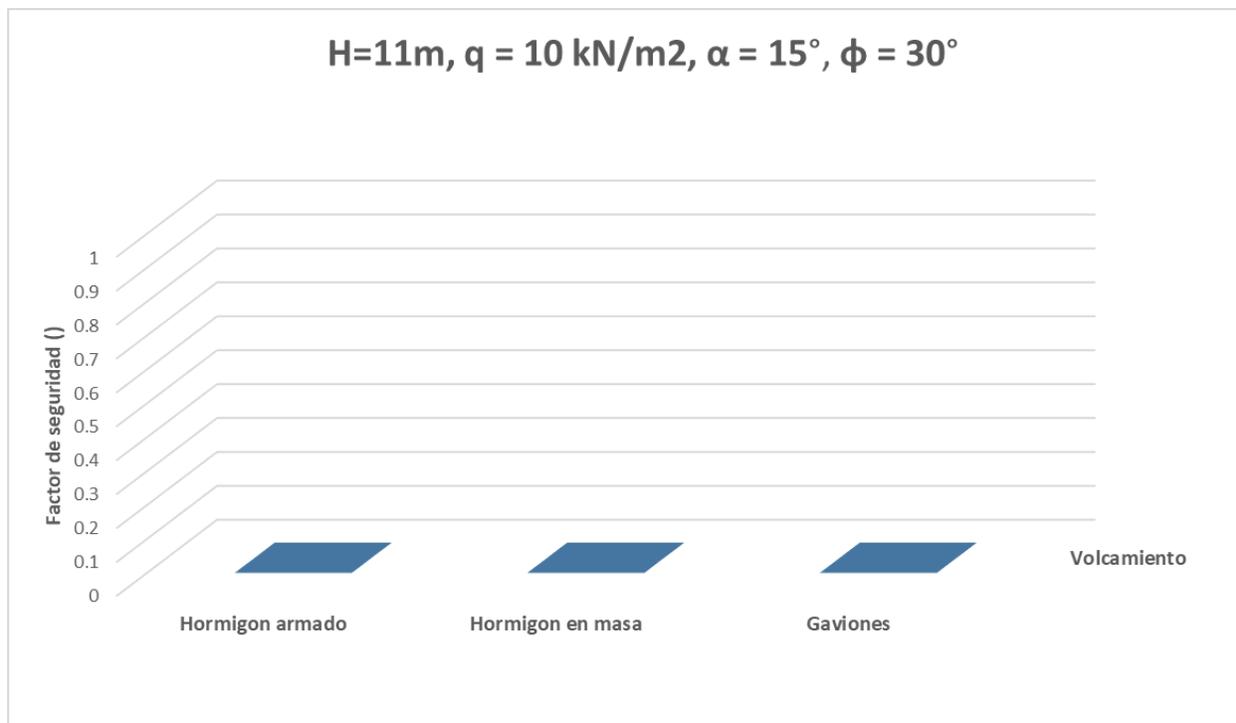
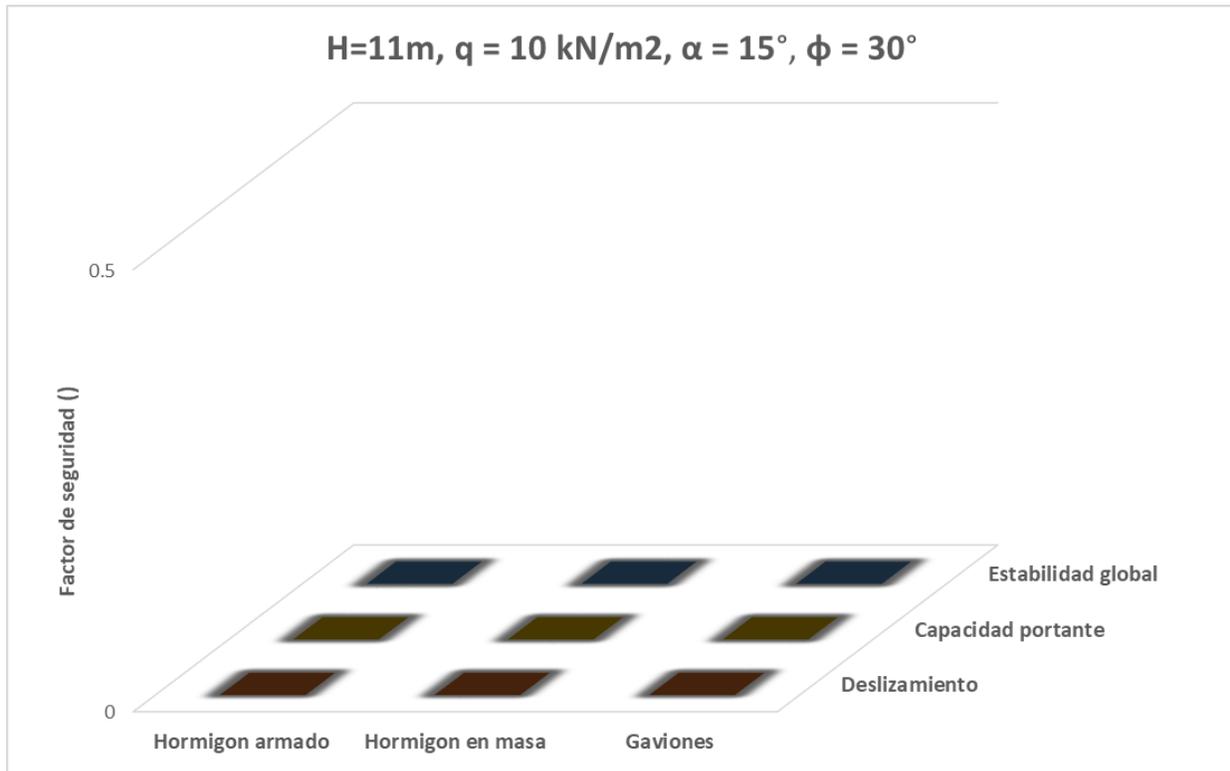


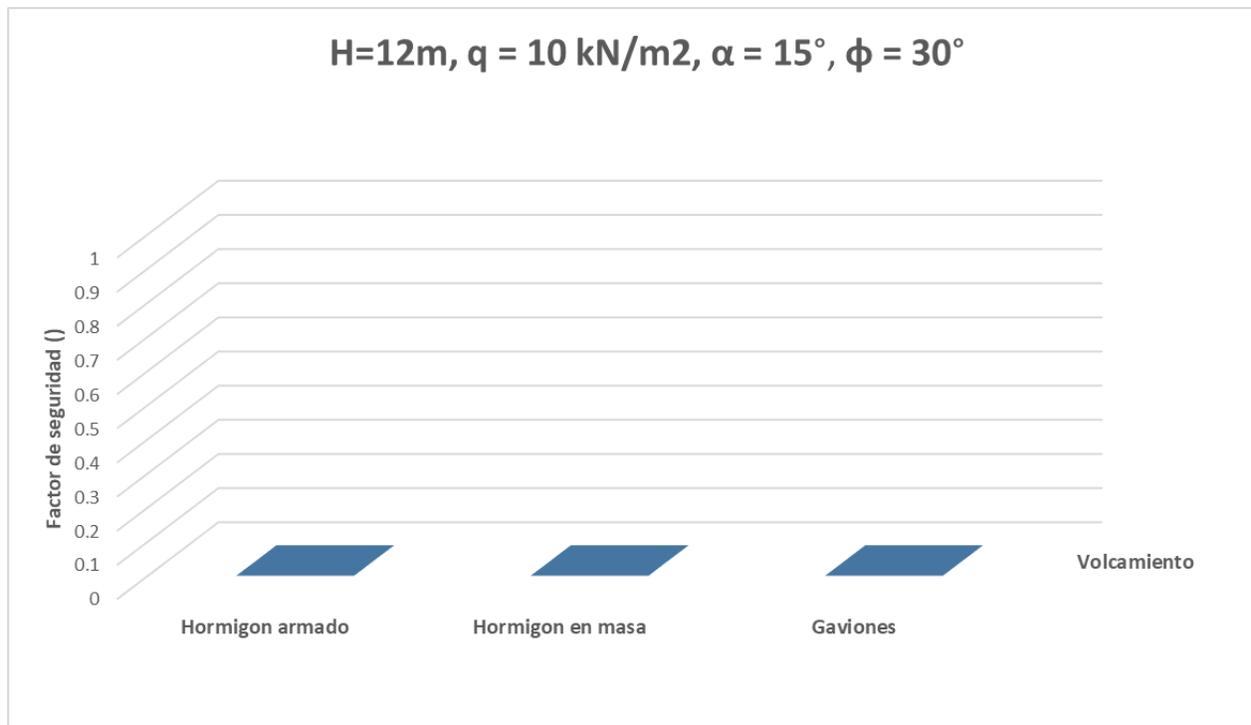
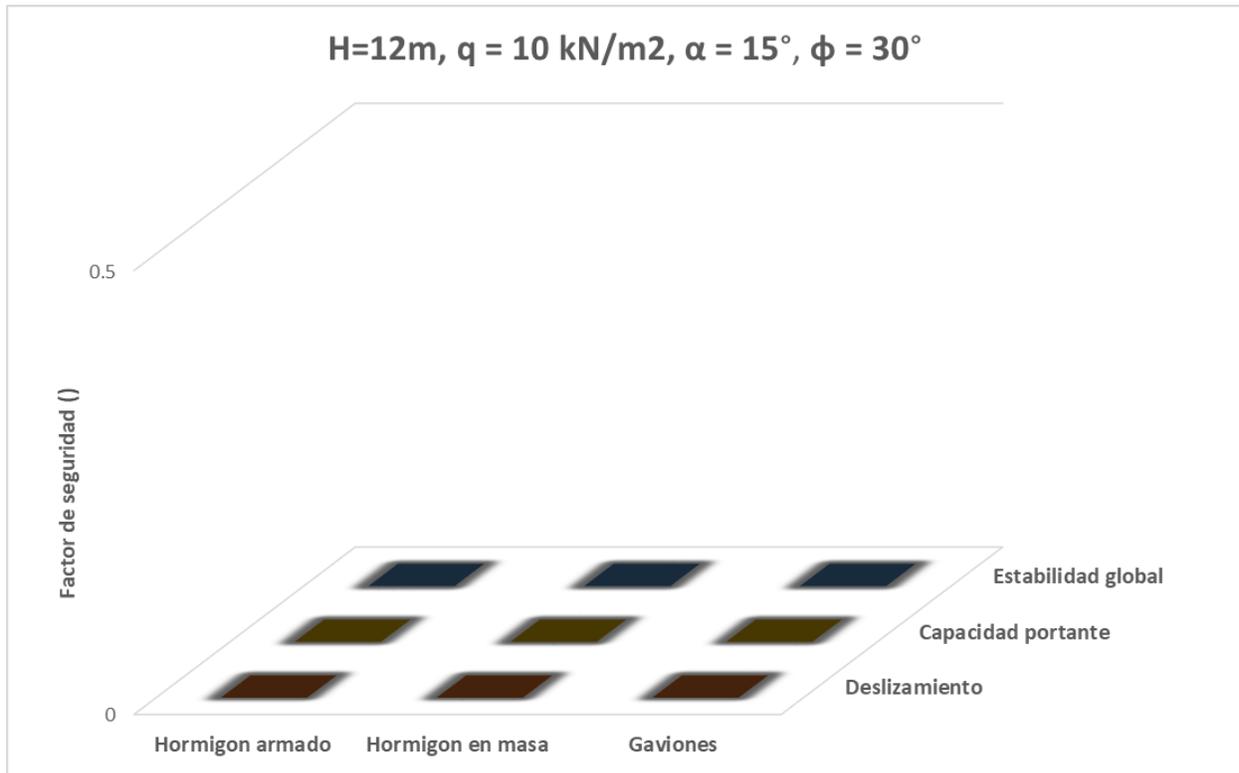


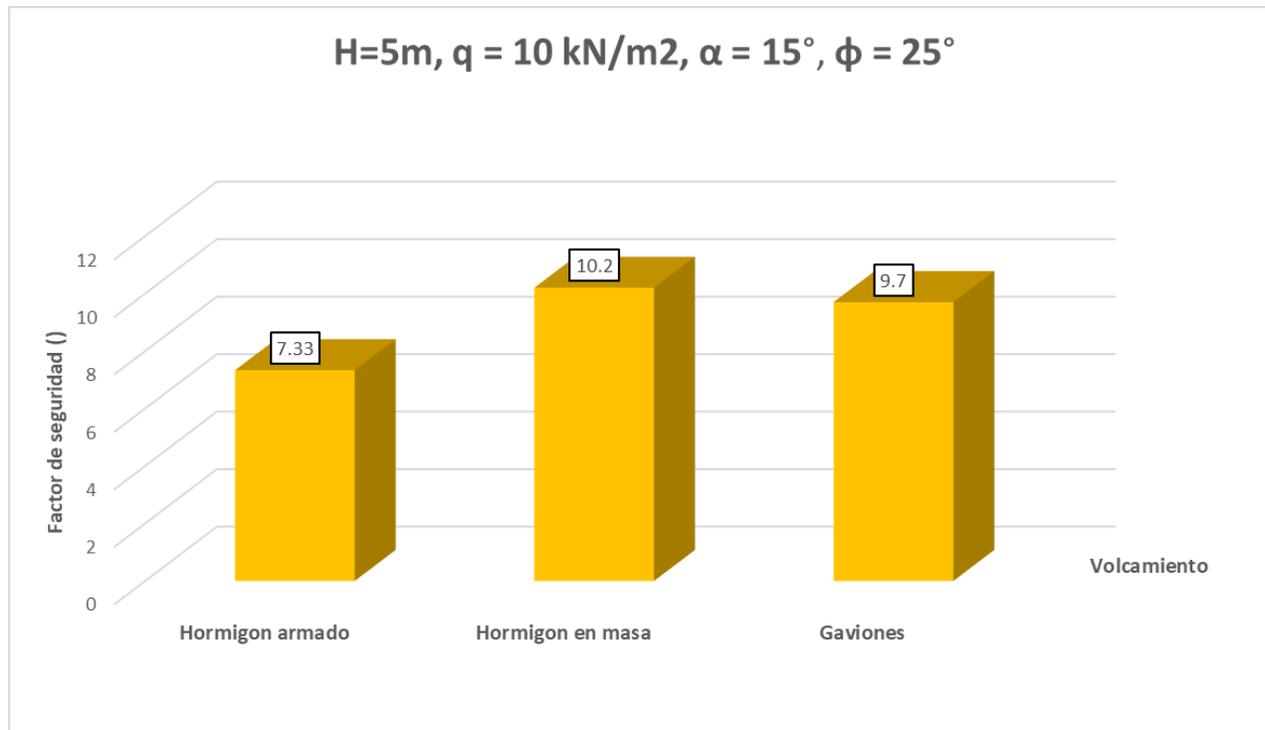
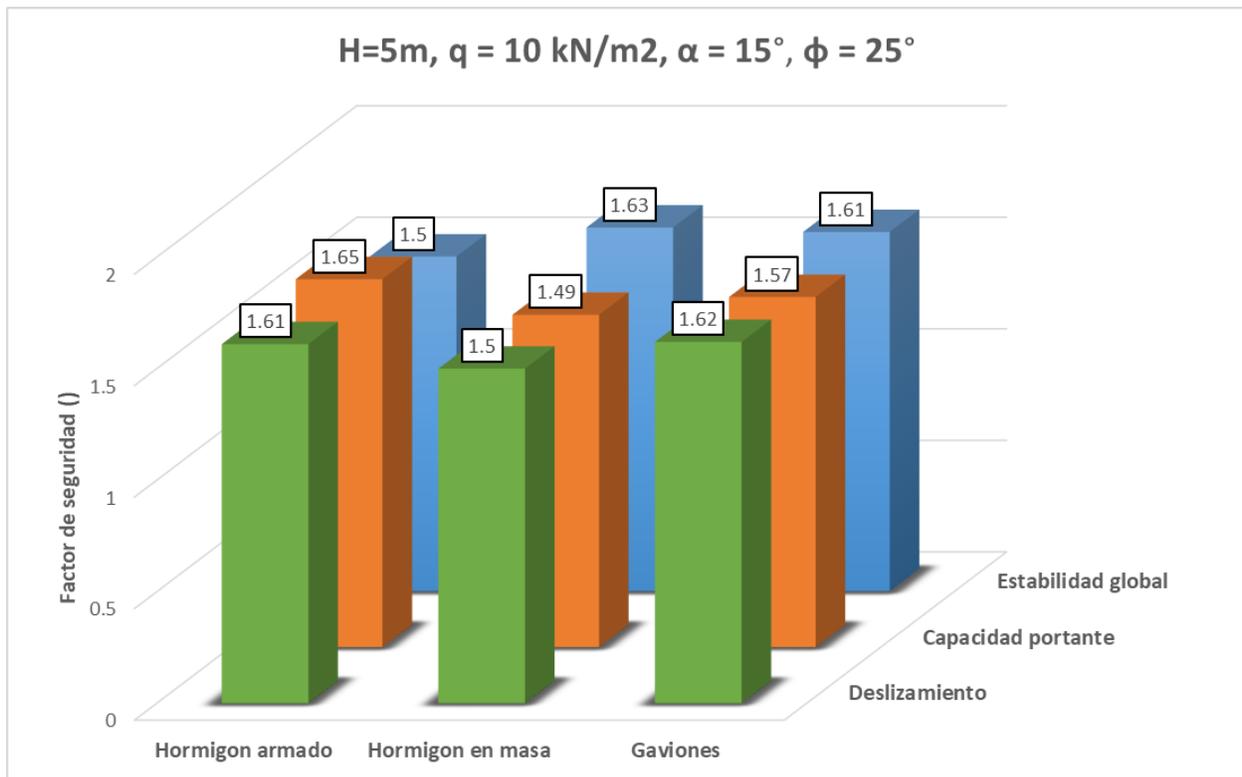


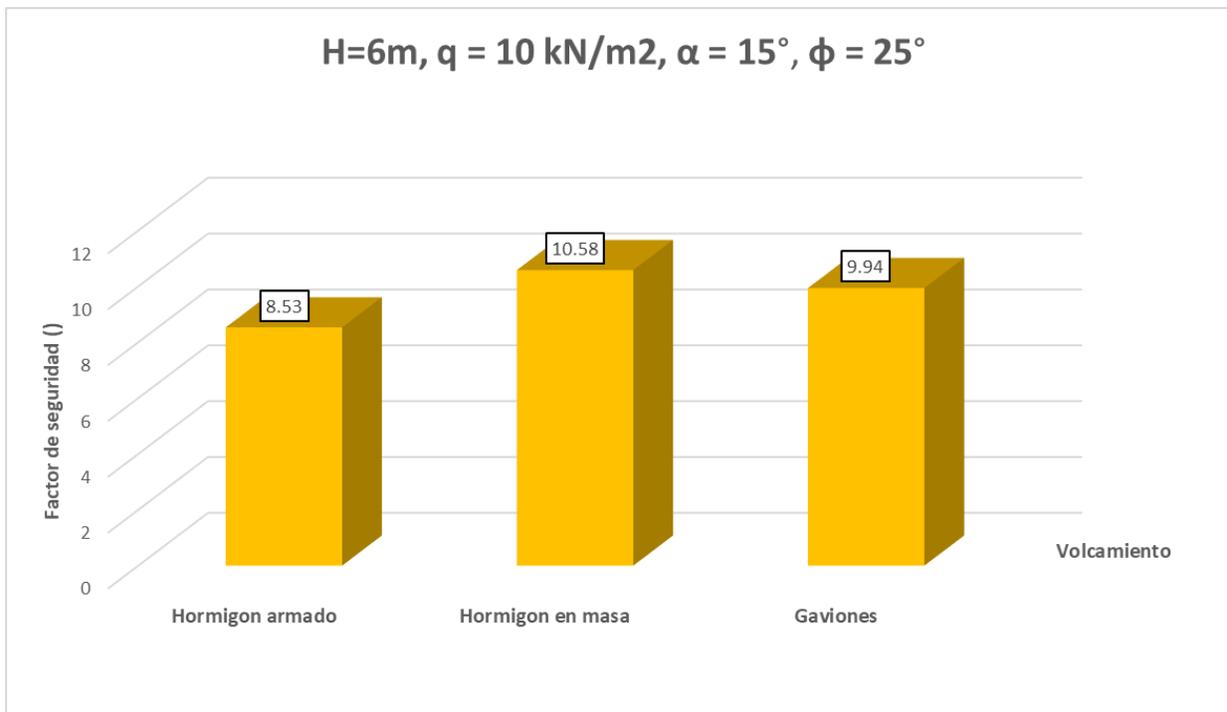
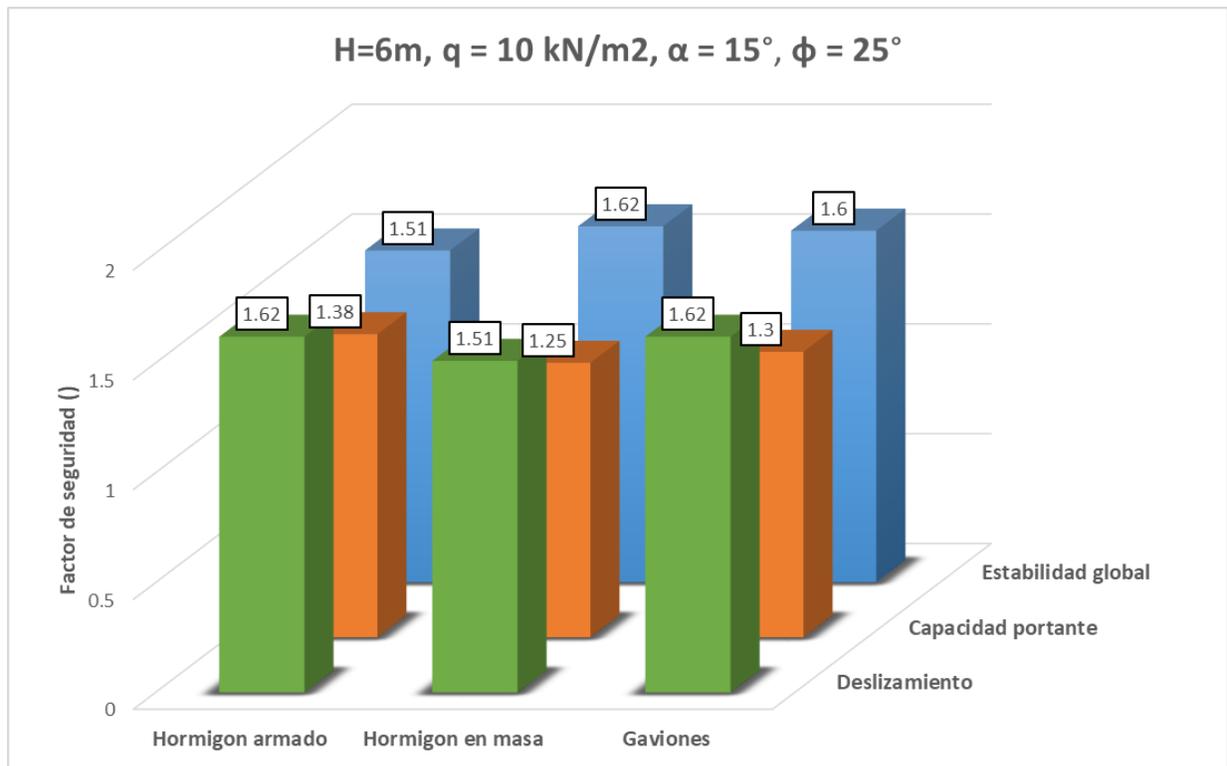


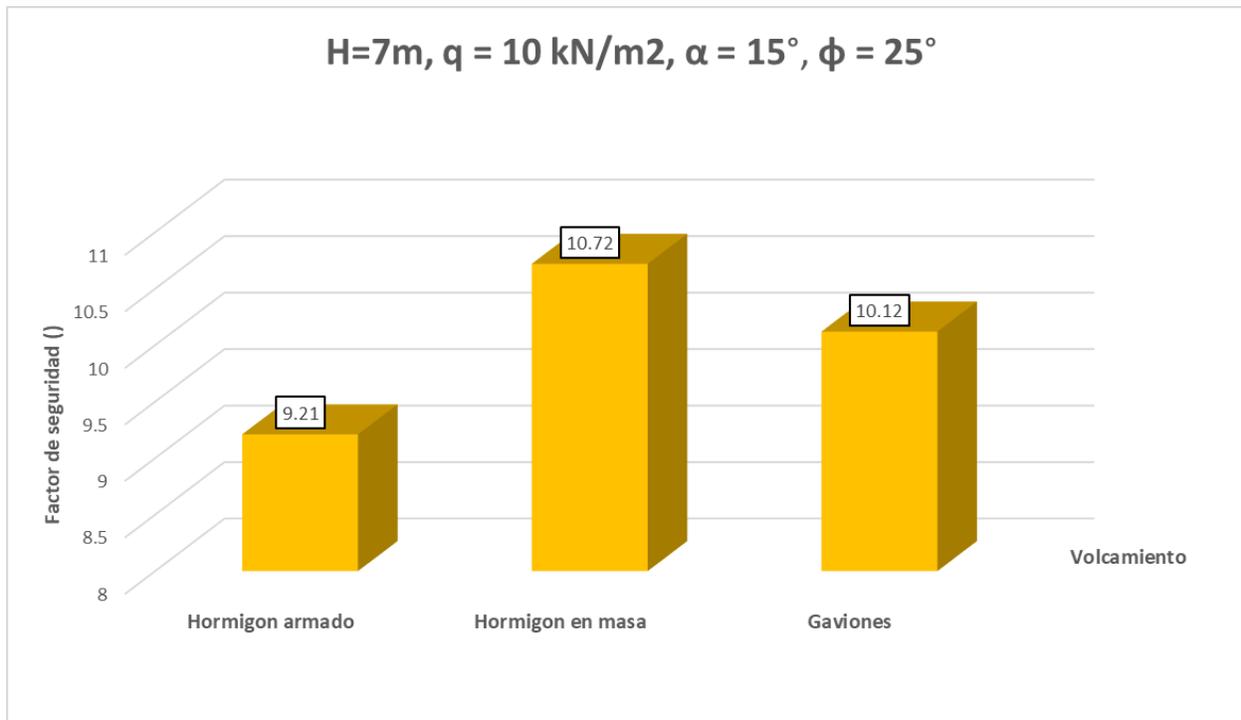
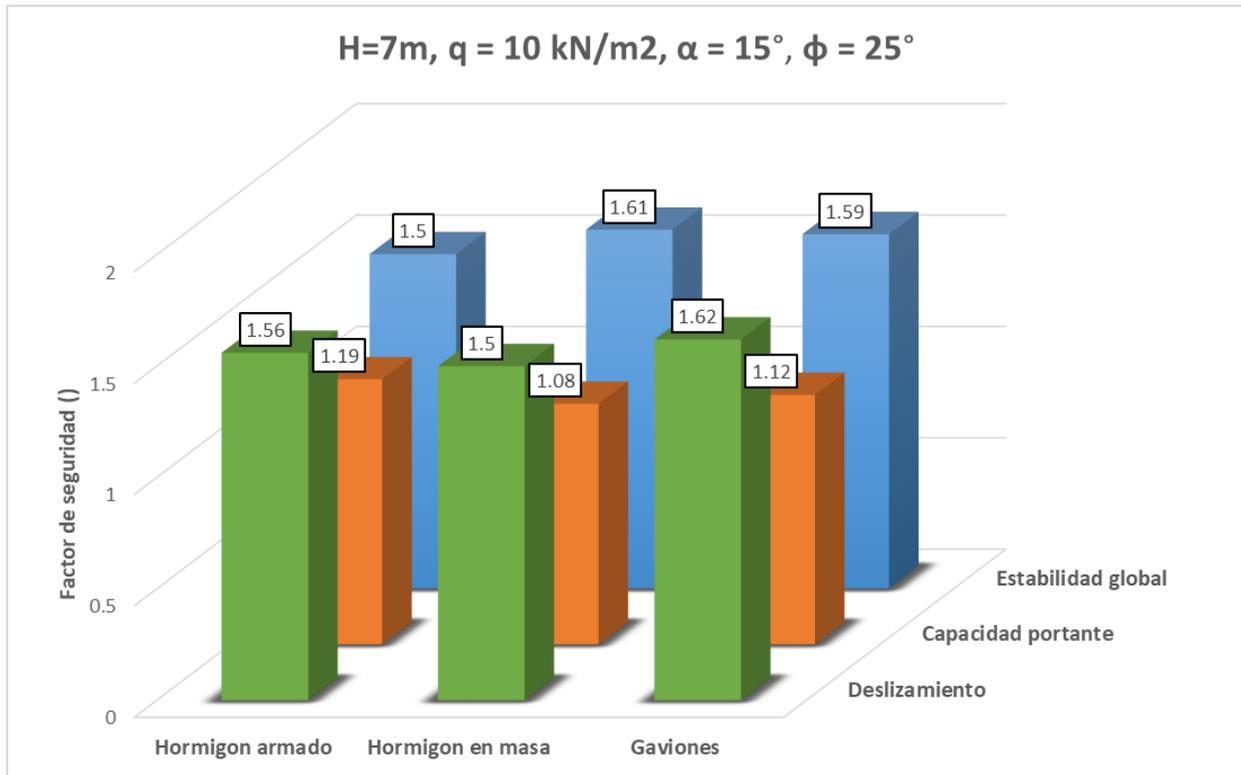


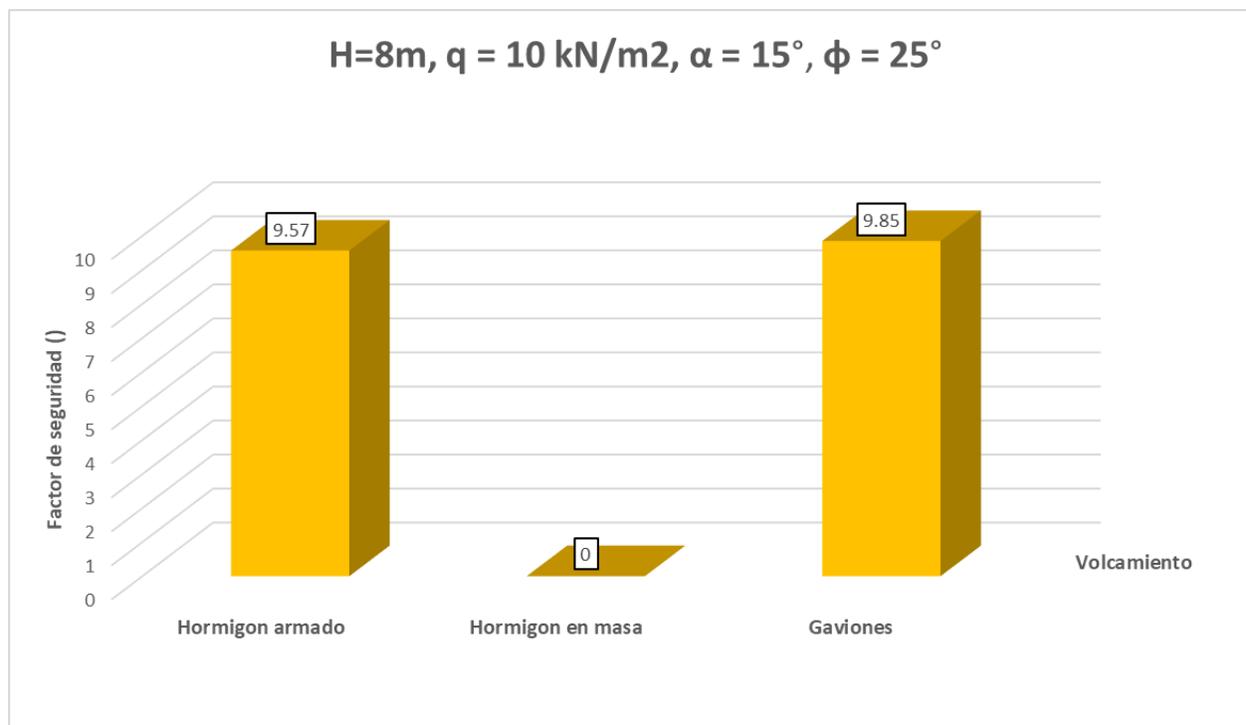
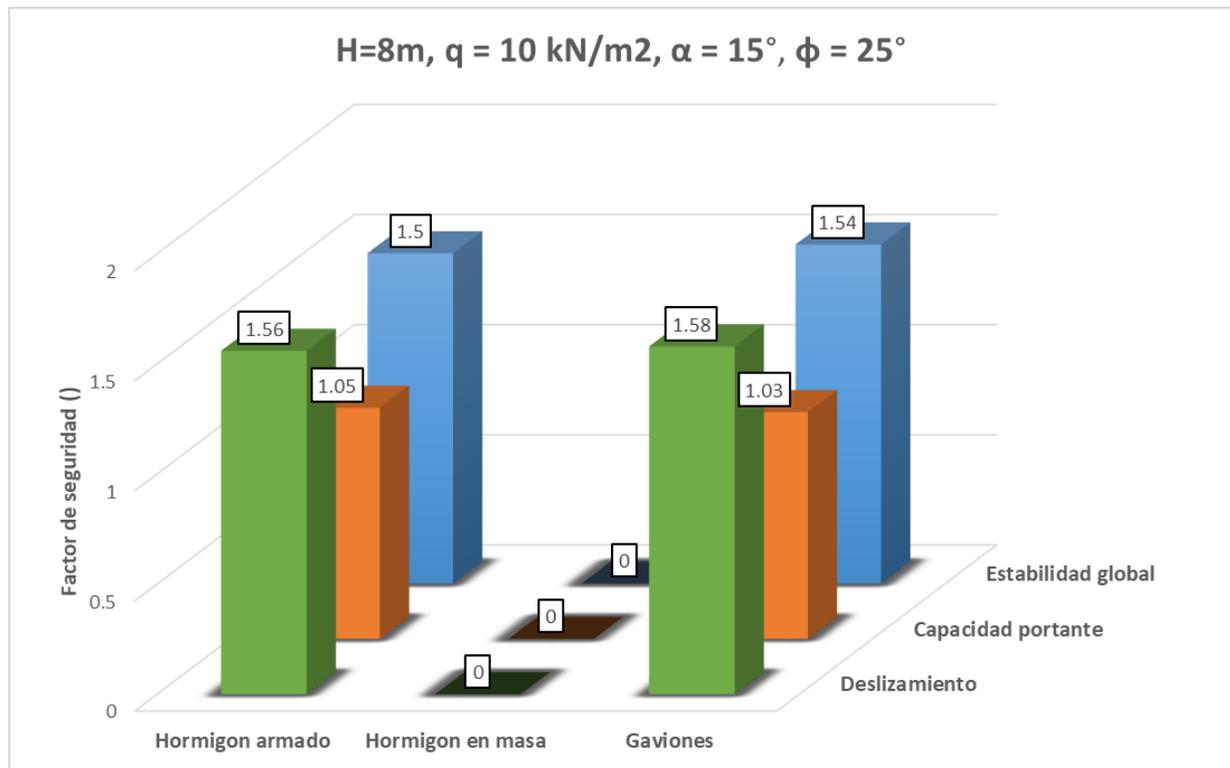


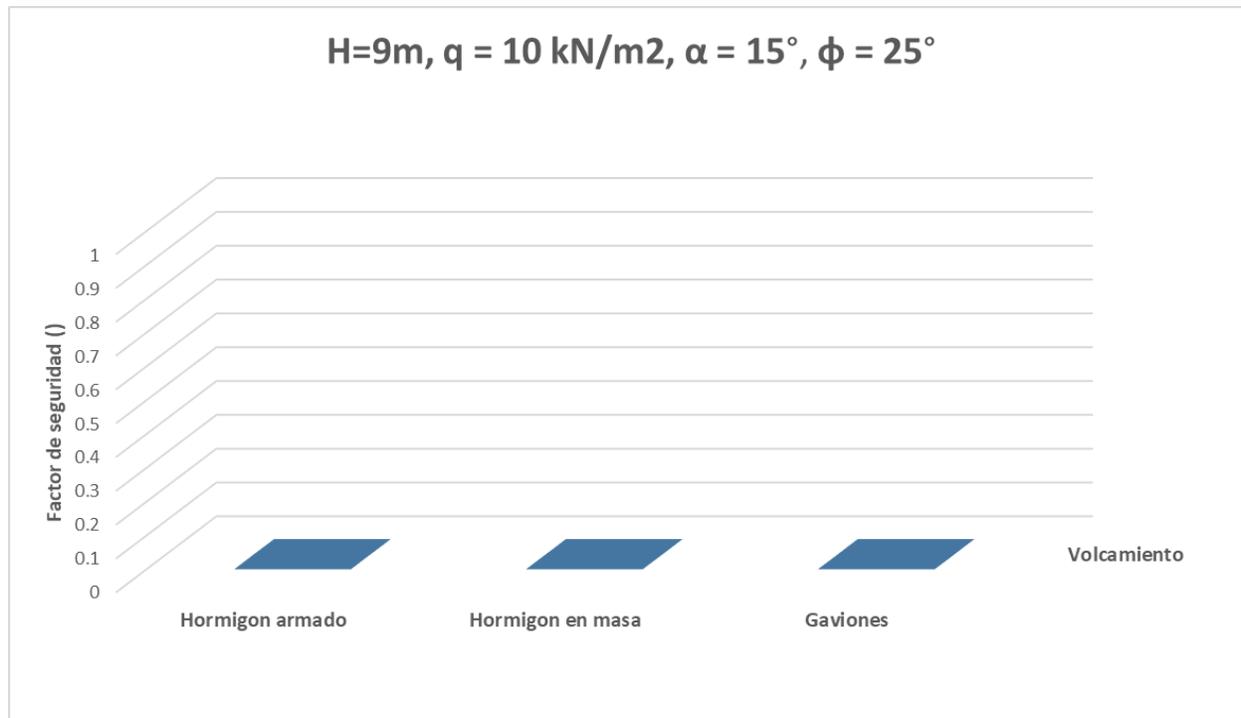
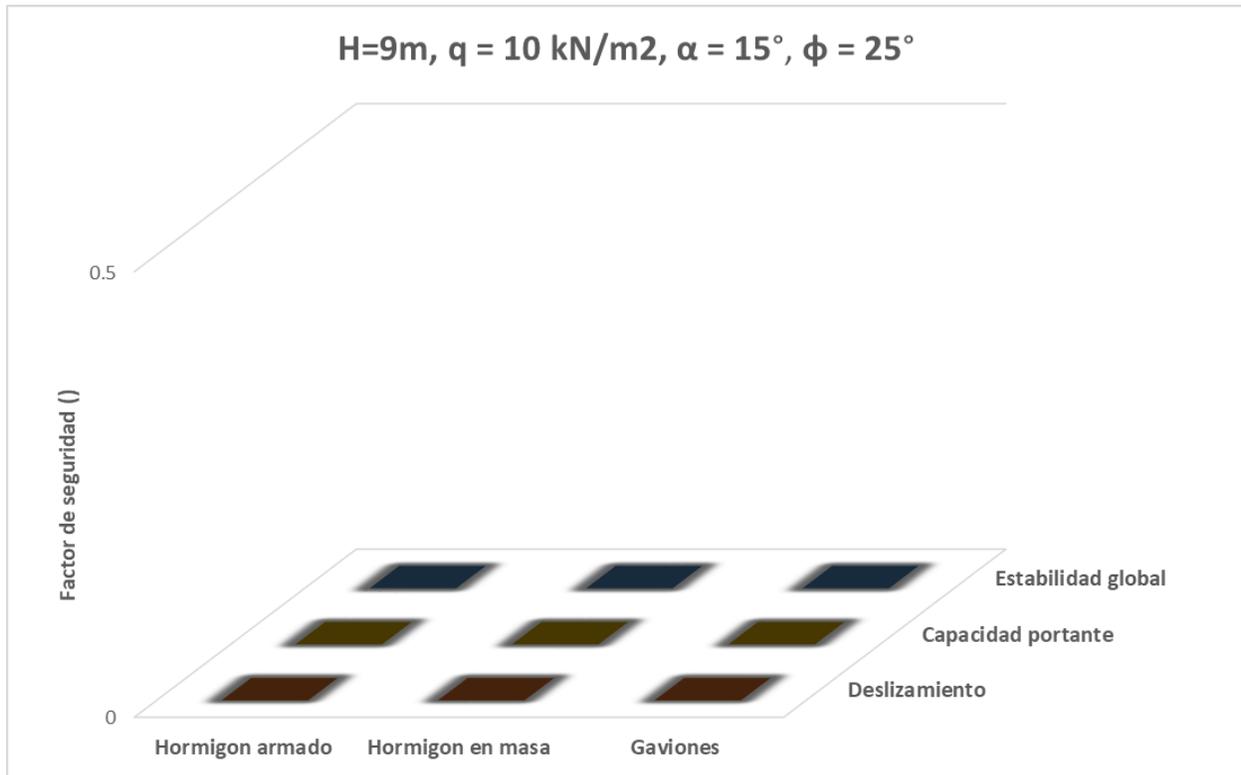


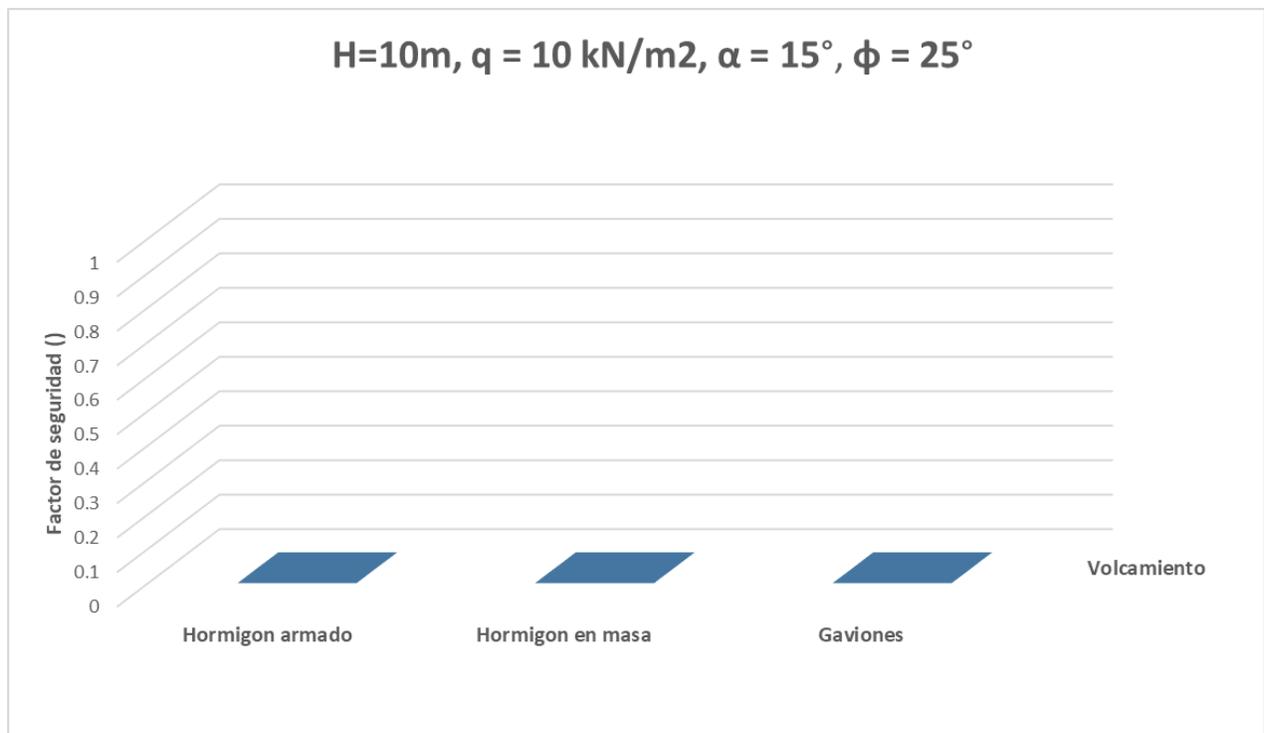
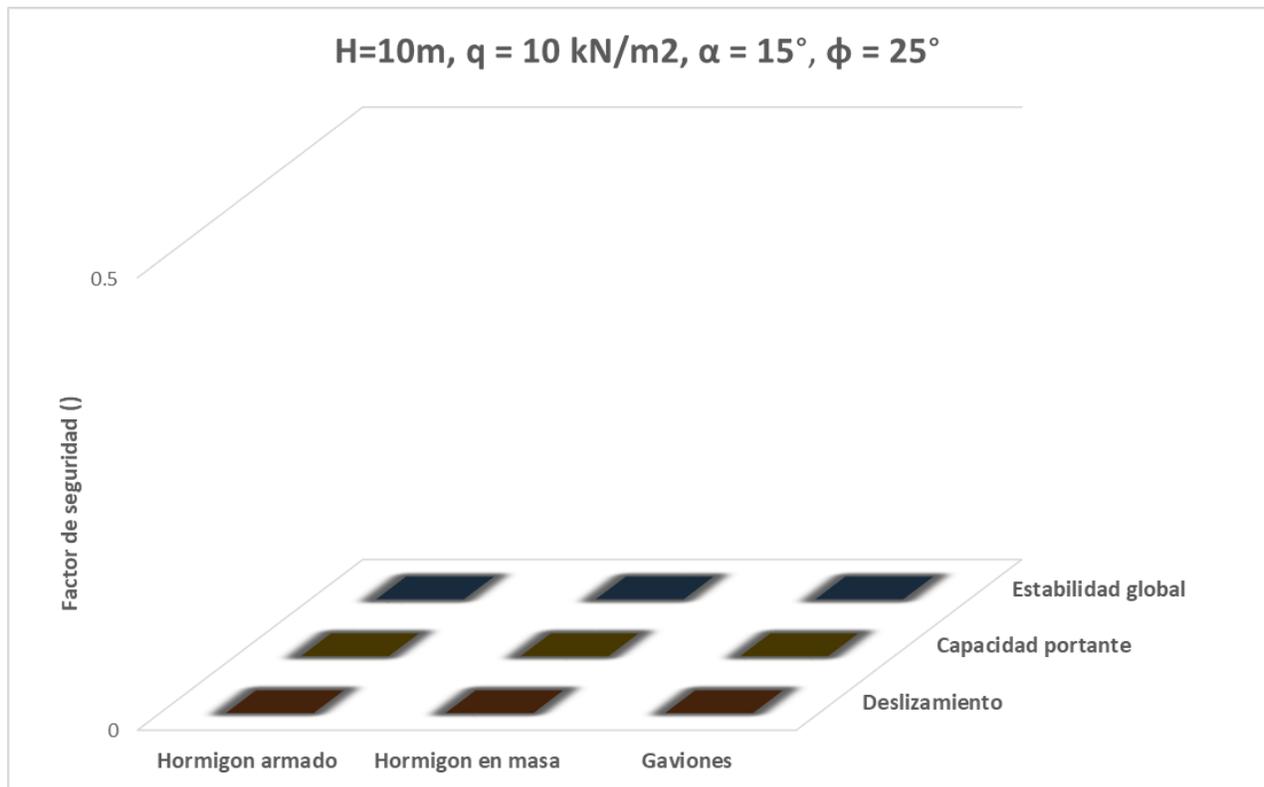


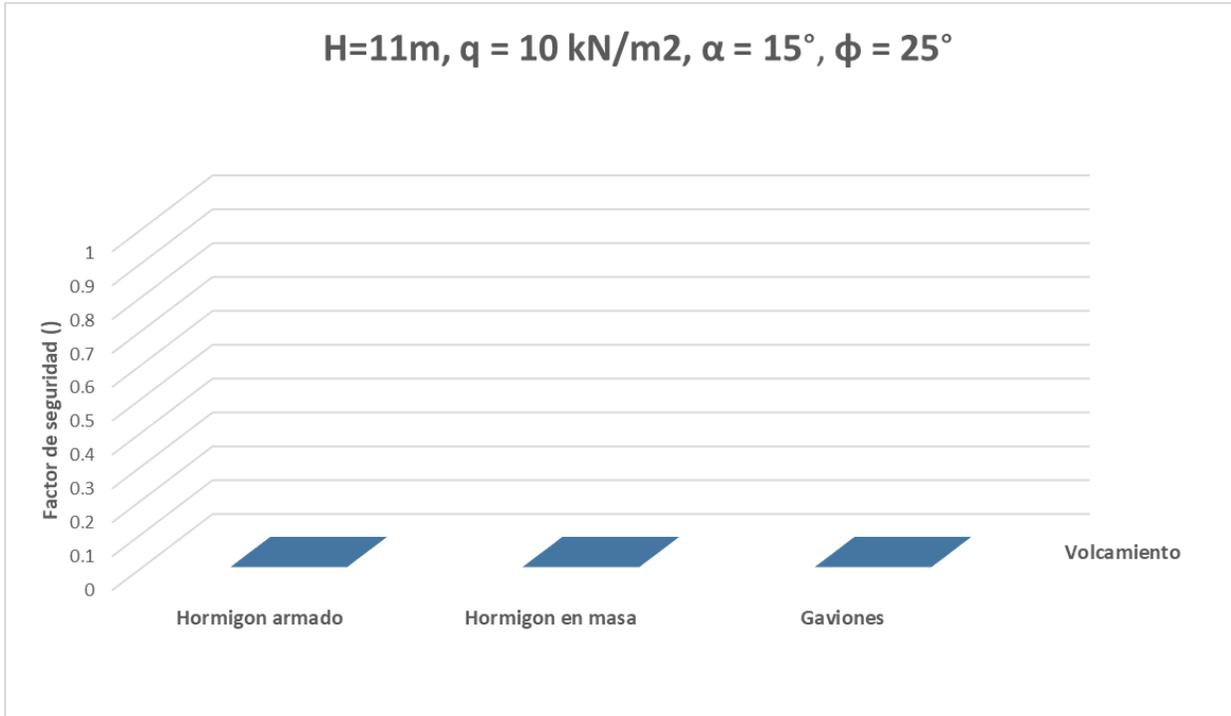
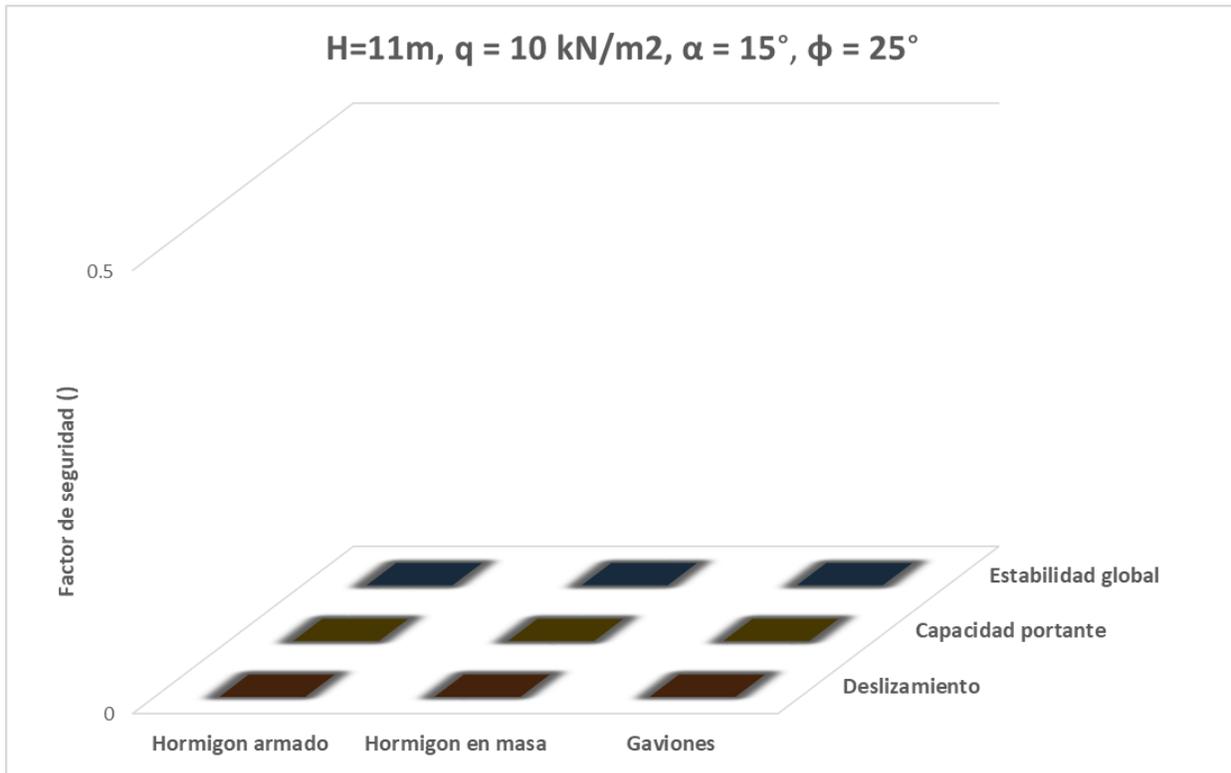


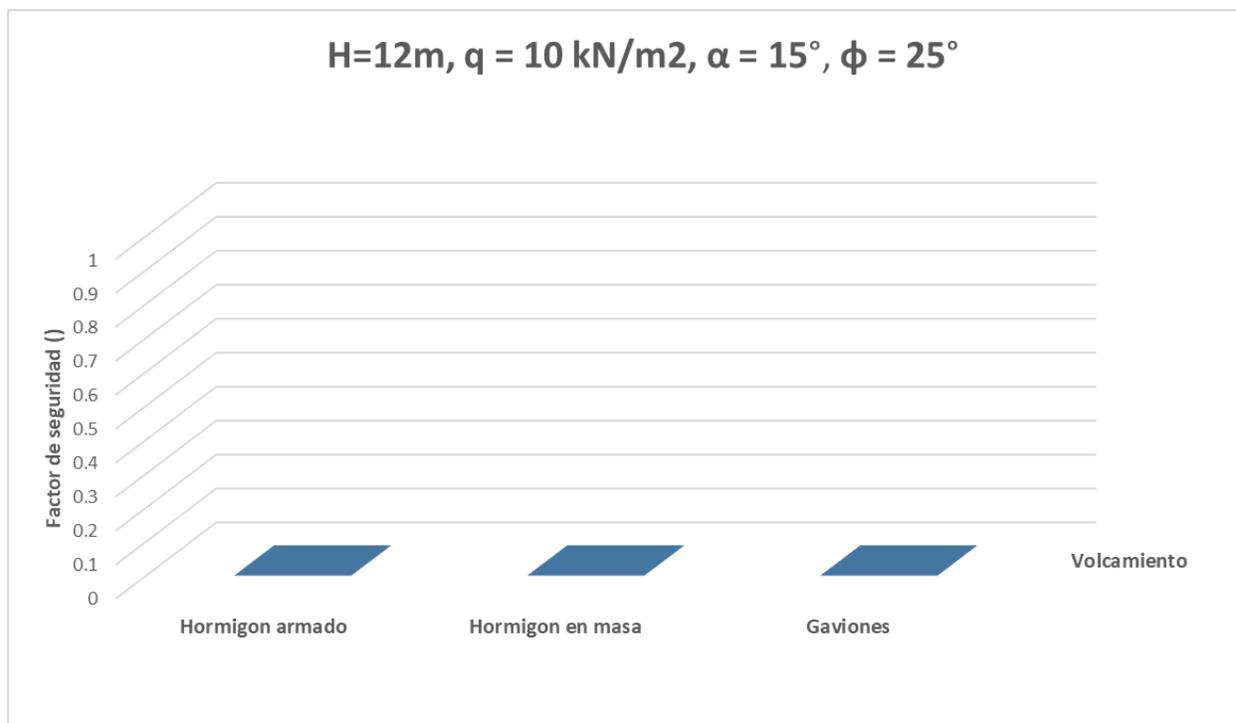
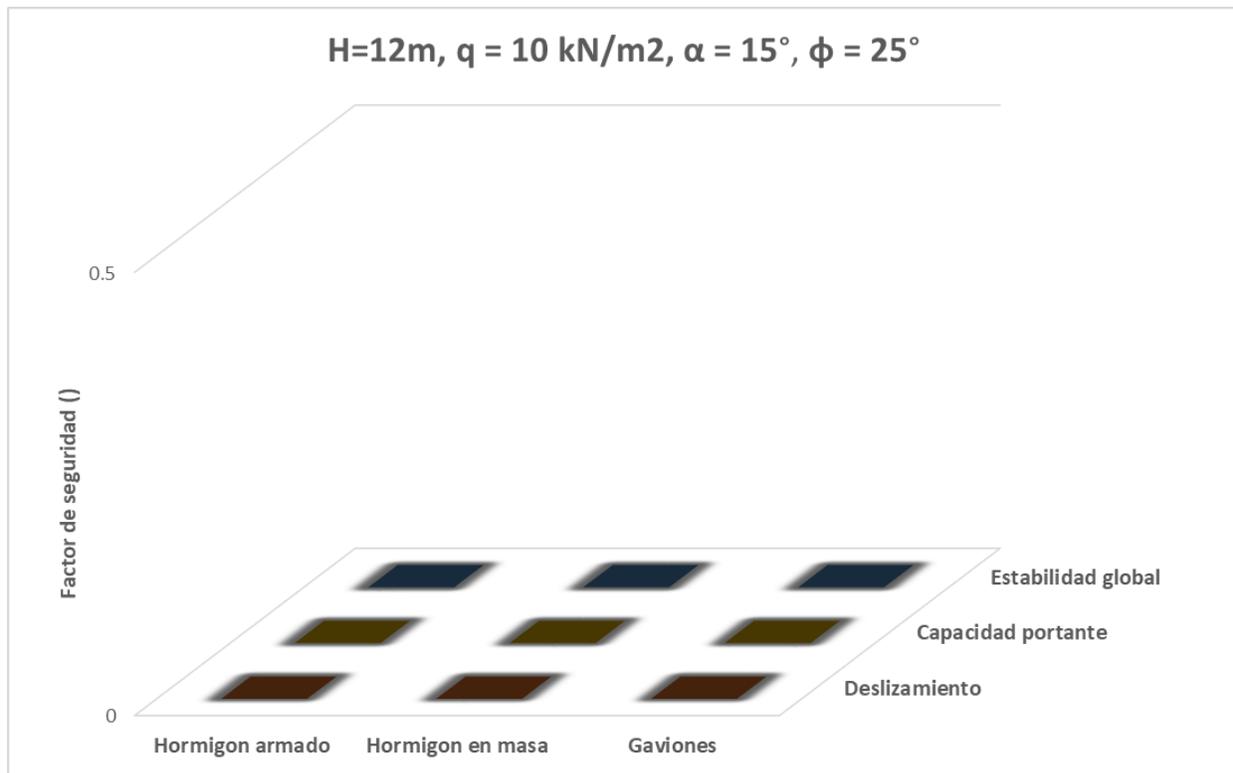












Para $q = 10$ (kN/m²), $\alpha = 15^\circ$ y $\phi = 20^\circ$ con las alturas de 5m a 12m no se tiene solución como los gráficos iguales a 0 mostrados anteriormente.

Para $q = 10$ (kN/m²), $\alpha = 30^\circ$ y $\phi = 35^\circ, 30^\circ, 25^\circ$ y 20° con las alturas de 5m a 12m no se tiene solución.

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