Categories of funcoids and reloids

Funcoids with objects being sets and composition of funcoids form a category which I call *the category of funcoids*.
The same holds for reloids.
Categories of funcoids and reloids are both partially ordered dagger categories with "the dagger" defined as

$$f \mapsto f^{-1}.$$

The order and the dagger agree:

$$f^\dagger \sqsubseteq g^\dagger \Leftrightarrow f \sqsubseteq g.$$