Opposite category

Recall that a category $\mathcal{C}$ consists of ob$(\mathcal{C})$ and mor$(\mathcal{C})$. For each morphism ϕ, we have objects $s(\phi)$ and $t(\phi)$, the source and the target. For the moment, let us denote them by $s_{\mathcal{C}}(\phi)$ and $t_{\mathcal{C}}(\phi)$, while the composition by $\circ_{\mathcal{C}}$.

Let us form the opposite category of $\mathcal{C}$, denoted by $\mathcal{C}^{\mathrm{op}}$, with

$$\mathrm{ob}\left(\mathcal{C}^{\mathrm{op}}\right) = \mathrm{ob}\left(\mathcal{C}\right), \qquad \mathrm{mor}\left(\mathcal{C}^{\mathrm{op}}\right) = \mathrm{mor}\left(\mathcal{C}\right)$$

and for every $\phi \in \mathrm{mor}\left(\mathcal{C}^{\mathrm{op}}\right)$

$$\begin{aligned} s_{\mathcal{C}^{\mathrm{op}}}(\phi) &= t_{\mathcal{C}}(\phi) \\ t_{\mathcal{C}^{\mathrm{op}}}(\phi) &= s_{\mathcal{C}}(\phi). \end{aligned}$$

The composition in $\mathcal{C}^{\mathrm{op}}$ satisfies

$$\phi \circ_{\mathcal{C}} \psi = \psi \circ_{\mathcal{C}^{\mathrm{op}}} \phi.$$

Question

Compare it with the notion of the opposite group. Is it a special case of an opposite category?