pre-p^{0,22}

$@i$ Precondition for a(v)
P State(ds) (v:T)
$\equiv_{\text{def}}$ $(\forall x{:}\text{Id}.\ \text{vartype}(i;x) \subseteq \rho\ ds(x)?\text{Top})$
& $\forall e@i.\ \text{kind}(e) = \text{locl}(a) \Rightarrow \text{valtype}(e) \subseteq \rho\ T$ & $P((\text{state when } e),\text{val}(e))$
& $\forall e@i.\ \exists e{\leq}e'.\text{kind}(e') = \text{locl}(a) \vee (\forall v{:}T.\ \neg P(\text{state after } e',v))$
& $((\exists v{:}T.\ P(\text{es_init}(es)(i),v)) \Rightarrow (\exists e{:}\text{E}.\ \text{loc}(e) = i))$

clarification:

pre-p(es;i;ds;a;T;P)
$\equiv_{\text{def}}$ $(\forall x{:}\text{Id}.\ \text{es-vartype}(es;\ i;\ x) \subseteq \rho\ \text{fpf-cap}(ds;\text{IdDeq};x;\text{Top}))$
& alle-at(es;i;e.es-kind(es; e) = locl(a) $\in$ Knd
$\Rightarrow$ es-valtype(es; e) $\subseteq \rho\ T$ & P(es-state-when(es;e),es-val(es; e)))
& alle-at(es;i;e.existse-ge(es;e;e'.es-kind(es; e') = locl(a) $\in$ Knd
$\vee$ ($\forall v{:}T.\ \neg P$(es-state-after(es;e'),v))))
& $((\exists v{:}T.\ P(\text{es_init}(es)(i),v)) \Rightarrow (\exists e{:}\text{es-E}(es).\ \text{es-loc}(es;\ e) = i \in \text{Id}))$

http://www.cs.cornell.edu/Info/Projects/NuPrl/FDLcontent/p0_286125_/p32_346366_{pre-p}.html