Inference at $*$
of proof for Lemma squash_thru_equiv_rel:

$\vdash \forall T$:Type, E:($T \to T \to \mathbb{P}$). ($\downarrow$EquivRel(T;x,y.$E(x,y)$)) $\Rightarrow$ EquivRel(T;x,y.$\downarrow E(x,y)$)
by InteriorProof ((((RepUnfolds "equiv_rel refl sym trans" 0)
CollapseTHEN (
GenUnivCD))·)
CollapseTHENA ((Auto_aux (first_nat 1:n) ((first_nat
1:n),(first_nat 3:n)) (first_tok :t) inil_term)))·

1:

1. T : Type
2. E : $T \to T \to \mathbb{P}$
3. $\downarrow$(($\forall a$:T. $E(a,a)$)
   & ($\forall a$, b:T. $E(a,b) \Rightarrow E(b,a)$)
   & ($\forall a$, b, c:T. $E(a,b) \Rightarrow E(b,c) \Rightarrow E(a,c)$))
4. a : T

$\vdash \downarrow E(a,a)$

2:

1. T : Type
2. E : $T \to T \to \mathbb{P}$
3. $\downarrow$(($\forall a$:T. $E(a,a)$)
   & ($\forall a$, b:T. $E(a,b) \Rightarrow E(b,a)$)
   & ($\forall a$, b, c:T. $E(a,b) \Rightarrow E(b,c) \Rightarrow E(a,c)$))
4. a : T
5. b : T
6. $\downarrow E(a,b)$

$\vdash \downarrow E(b,a)$

3:

1. T : Type
2. E : $T \to T \to \mathbb{P}$
3. $\downarrow$(($\forall a$:T. $E(a,a)$)
   & ($\forall a$, b:T. $E(a,b) \Rightarrow E(b,a)$)
   & ($\forall a$, b, c:T. $E(a,b) \Rightarrow E(b,c) \Rightarrow E(a,c)$))
4. a : T
5. b : T
6. c : T
7. $\downarrow E(a,b)$
8. $\downarrow E(b,c)$

$\vdash \downarrow E(a,c)$

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http://www.nuprl.org/FDLcontent/p0_942988_/p121_81083_{squash_thru_equiv_rel}.html